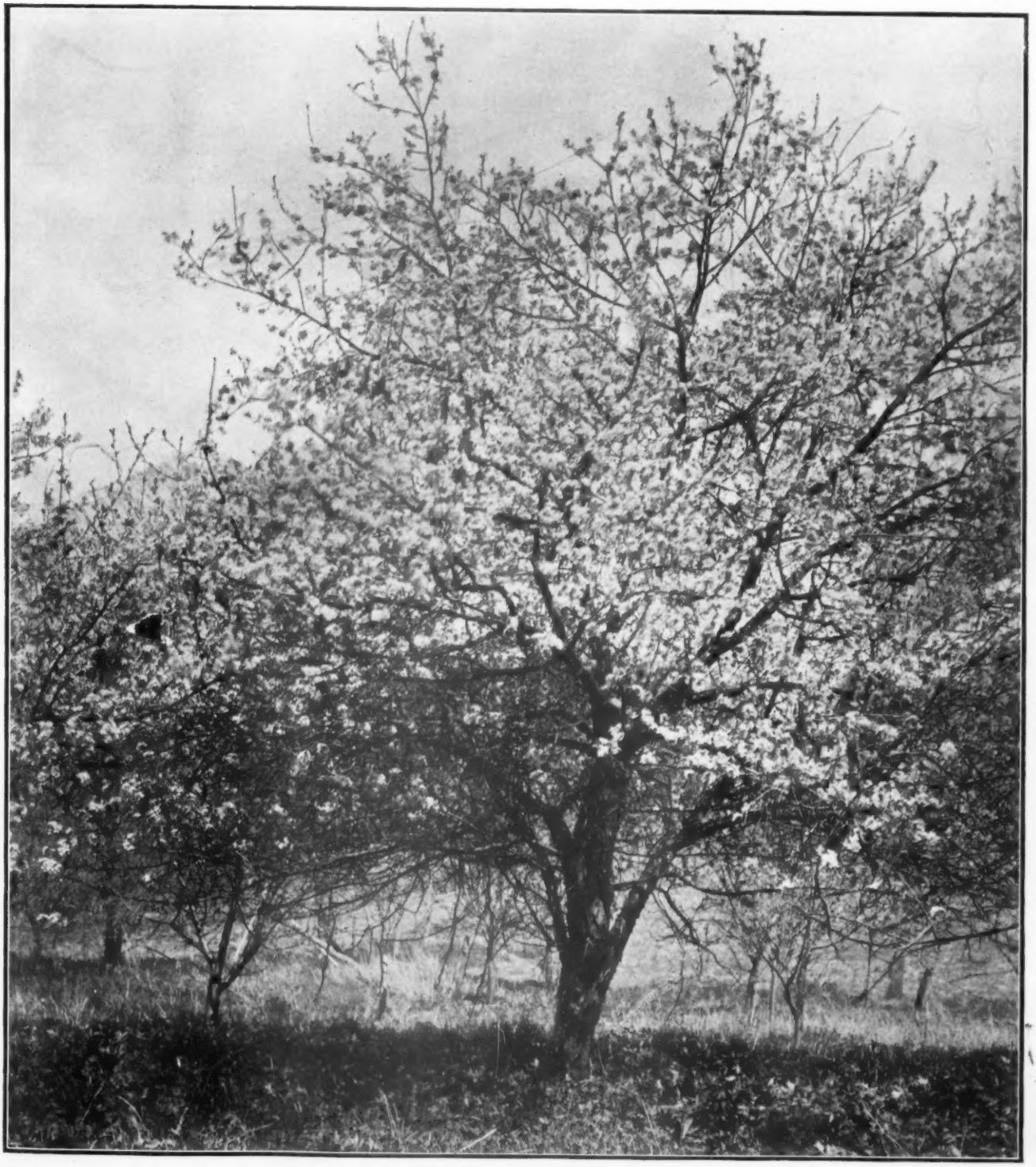
# AMERICAN BEE JOURNAL

MAY, 1918



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**Quirin's Improved Superior Italian Bees and Queens. They are Northern Bred and Hardy. 25 Years a Queen-breeder.**

| Before July 1.— | 1 | 6 | 12 |
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| Select untested | $ 1.50 | $ 8.00 | $15.00 |
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| Select tested | 2.00 | 10.00 | 18.00 |
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| 3-Comb Nuclei | 4.50 | 25.00 | 45.00 |
| 8-frame Colony | 8.00 | 45.00 | |
| 10-frame Colony | 10.00 | 55.00 | |
| 1-lb. package bees | 2.50 | 14.00 | |
| 2-lb. packages bees | 4.50 | 25.00 | |

BREEDERS.—The cream selected from our entire stock of outyards; nothing better. These breeders, $5 each.

Can furnish bees on Danzenbaker and L. or Hoffman frames.

Above prices on bees by pound, nuclei, and colonies does not include queen. You are to select such queen as you wish with the bees, and add the price.

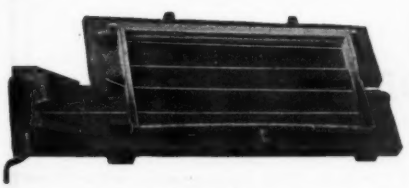
No bees by pound sent out till first of June.

Breeders, select tested, and tested queens can be sent out as early as weather will permit.

Send for testimonials. Orders booked now.

Reference: Any large supply dealer or any bank having Dun's reference book.

**H. G. Quirin, Bellevue, Ohio.**



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**Most rapid in use. Saves cost of machine in one day. Tighter wires, no kinks, no sore hands. Price, $2.50, postpaid in U. S. A.**

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## MOTT'S NORTHERN-BRED ITALIAN QUEENS

that resist disease well. Those that resist disease must be hardy, prolific, and hustlers; they are gentle. Bees per pound. Plans on "How to Introduce Queens and Increase," 25 cents. List free. Untested $1 each.

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We carry a complete stock of supplies at all times, and can make prompt shipments. Our prices will interest you.

A trial order will convince you that our prices and goods are right.

Send us your inquiries.

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## Bee Hives and Supplies of All Kinds

Discount for early orders. Book on how to handle bees, 27c by mail Instructive catalog free.

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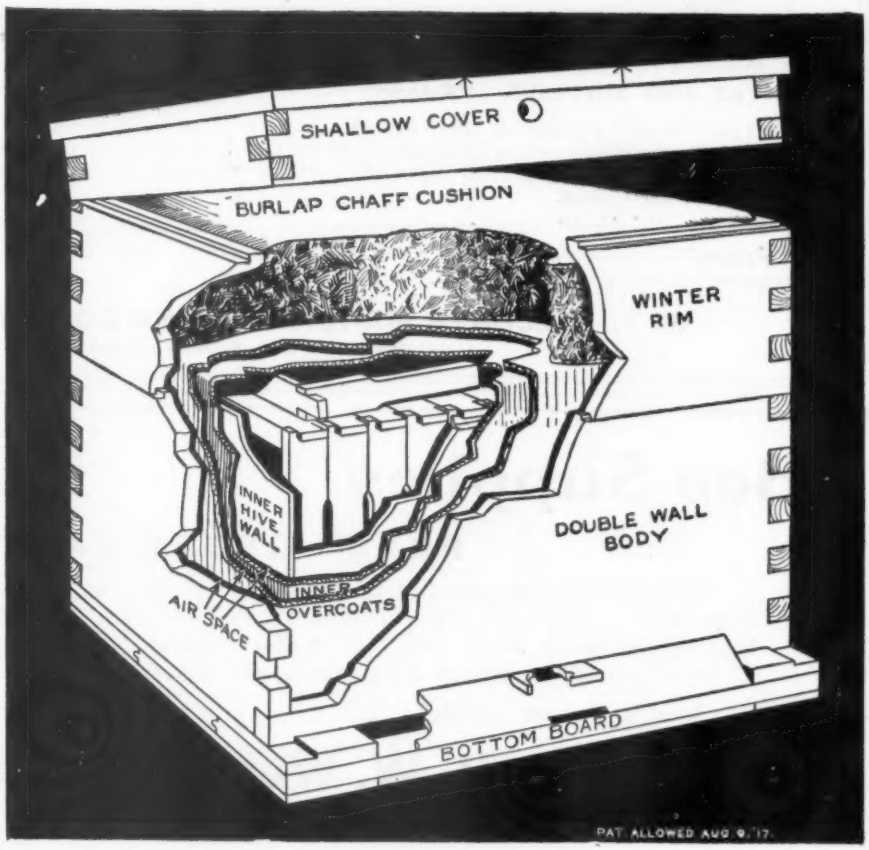
# WINTER PROBLEM SOLVED

BY

# Woodman's Improved Protection Hive

**"THE HIVE WITH AN INNER OVERCOAT"**

**100% Perfect Protection by Tests, Winters of 1916-17-18**




## The Inner Overcoat Did It

Without any special preparation we have wintered bees in these hives without loss. It is a joy to see the condition they are in, when compared with other styles of hives and wintering methods. The INNER OVERCOAT is telescoped down over the brood nest, in between the outer and inner hive walls, when preparing them for winter. In the spring it is removed and stored away in the K. D. flat. Not more than two minutes are required to pack or unpack a hive by this method. The INNER OVERCOAT affords more protection than several inches of ordinary packing material. Send for a special circular showing 10 large illustrations.

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SIXTY-POUND CANS, in cases or in bulk, are being sold by us at prices considerably below general market prices. Send us an estimate of your requirements and let us quote prices.

FRICTION TOP PAILS, any size furnished, and in quantities as you may desire. Send us a list of your requirements and let us quote prices, as we can save you money. The tin can factories are rushed with orders, the tin plate situation is serious and transportation slow, so it will be wise to place your orders early.

## A. G. WOODMAN CO., Grand Rapids, Mich.

# "falcon"

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1. There must be a good location for the apiary.
2. Queens must be healthy and vigorous to put life into the hives. (Our queens are the best to be had and at reasonable prices.)
3. Your bees cannot do the work they should if you do not give them the best with which to work. If they have ample storage space, if they can work all the time without slack motion, they will be more contented and swarmless. To accomplish this, you must give them ample storage space, that is, the **RIGHT HIVES AND SUPPLIES. "falcon"**

Beekeepers should be placing their orders early for their early needs. He who waits is apt to suffer. These late beekeepers who want their goods in such a hurry at the last minute will lose some of the honey crop by not furnishing their bees with ample storing space. Railroad embargoes and rush business make deliveries slow.

Our famous **"falcon"** supplies will please you. Do not wait. Order now and strike while the iron is hot. **"falcon"** means the best, the standard of perfection. Red Catalog and Simplified Beekeeping upon request. Dealers everywhere.

**W. T. FALCONER MANUFACTURING CO., Falconer, New York**

**Where the Good Beehives Come From**

# Bee Supplies Bee Supplies

**READ—ORDER EARLY**

Owing to the congestion of freight and embargoes, we caution all beekeepers to get their order in early, otherwise you will suffer a great loss when you actually need goods, and you perhaps will be unable to get them for the above reasons. We have a large stock on hand, and can fill orders promptly, provided the railroads will accept freight.

*Send for our new catalog.*

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**2146 Central Ave.** **Cincinnati, Ohio**

# TENNESSEE-BRED QUEENS

**46 Years' Experience in Queen-Rearing**

**Breed 3-Band Italians Only**

| | *Nov. 1 to May 1* | | | *May 1 to June 1* | | | *June 1 to Aug. 1* | | | *Aug. 1 to Nov. 1* | | |
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| | 1 | 6 | 12 | 1 | 6 | 12 | 1 | 6 | 12 | 1 | 6 | 12 |
| Untested ..... | $1.50 | $ 7.50 | $13.50 | $1.25 | $ 6.50 | $13.50 | $1.00 | $ 5.00 | $ 9.00 | $ .80 | $ 4.50 | $ 8.50 |
| Select Untested | 2.00 | 8.50 | 15.00 | 1.50 | 7.50 | 13.50 | 1.25 | 6.50 | 12.00 | 1.10 | 6.00 | 10.50 |
| Tested ..... | 2.50 | 13.50 | 25.00 | 2.00 | 10.50 | 18.50 | 1.75 | 9.00 | 17.00 | 1.50 | 8.00 | 15.00 |
| Select Tested .... | 3.00 | 16.50 | 30.00 | 2.75 | 15.00 | 27.00 | 2.50 | 13.50 | 25.00 | 2.00 | 11.00 | 18.00 |

**Capacity of yard, 5000 queens a year**

**Select queen tested for breeding, $5**

**The very best queen tested for breeding, $10**

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Full colonies of Italian bees in a new 8-frame chaff hive for $15. Italian queens, $1.50. Nucleus colonies and bees by the pound.

Catalog of bees and supplies free.

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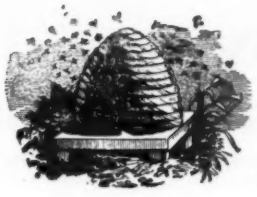
**1424 Market Street, Denver, Colo.**

**A BOOK FOR BEGINNERS**

"First Lessons in Beekeeping," written by the editor of this magazine, is intended primarily for the use of beginners in beekeeping. You should have it. Price, postpaid, $1, or clubbed with the American Bee Journal, one year for $1.75.

**American Bee Journal, Hamilton, Ill.**

# The Proof *of the* Pudding



**Riverside Farm and Bee Apiary**

G. A. BARBISCH, Prop.

HIGHEST GRADE EXTRACTED HONEY

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Dadant & Sons,
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Gentlemen:

Have shipped you today, by freight prepaid, 82 pounds of No. 1 Quality Yellow Beeswax. Enclosed find bill of lading. Please work same into medium brood foundation, pack in 3 or 5 lb. paper cartons and ship by freight to Mound Prairie, my nearest freight office. Let me know at once how much the charges are and I will send check by return mail.

Wish to tell you that Dadant's Foundation is far ahead of any other kind I ever tried; no trouble to get bees to accept it and make into beautiful combs. You surely hit the nail on the head when you say it excels. Hereafter, as long as I can get Dadant's Foundation, I shall use no other kind.

G. A. BARBISCH,
Mound Prairie, Houston Co., Minn.

Feb. 20/18.

***When ordering of your dealer, insist on Dadant's Foundation. If he hasn't it, order from us.***

## DADANT & SONS

*HAMILTON, ILLINOIS*

# Make This a Lewis Year

While you are starting the year's work, getting your bees ready for business, taking stock of supplies on hand and speculating as to what the season's outcome will be,

## Make This Resolution

That you will use LEWIS BEEWARE this year—because it means success insurance to you—because it means beehives and parts made of the best material by skilful workmen—because it means goods accurately and systematically packed—because it means sections made of bright lumber, highly polished, accurately dovetailed and scientifically grooved.

## Help Your Bees Sting the Kaiser

Order your supplies early, and order standard goods in order to save time and enable us, as manufacturers, to accomplish the most in the shortest possible time. Now, of all times, the Beekeeper should not put off until tomorrow what he can do today. You owe it to your country and to yourself to prepare at once for the gathering of the 1918 crop.

**LEWIS HIVES**
**ARE BUILT LIKE FURNITURE**

**LEWIS SECTIONS**
**THE KIND THAT DO NOT BREAK IN FOLDING**

You will find LEWIS BEEWARE almost at your own door—thirty distributing houses in the United States and foreign countries. If you have not one of our catalogs, send for copy at once.

# G. B. LEWIS COMPANY

***Exclusive Manufacturers of Lewis Beeware***

**WATERTOWN, WISCONSIN, U. S. A.**

AMERICAN BEE JOURNAL

VOL. LVIII—NO. 5 HAMILTON, ILL., MAY, 1918 MONTHLY, $1.00 A YEAR

# THE EVOLUTION OF THE BEEHIVE

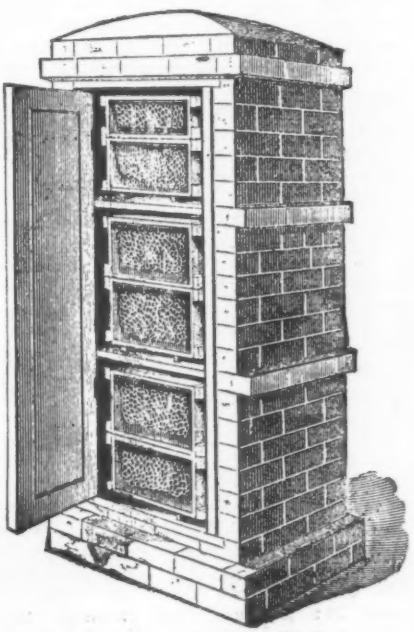
## The Second of a Series of Articles by the Editor Showing the Development of Hive Construction Since the Earlier Days

IN 1750 a man was born who had great influence upon beekeeping, F. Huber, a Swiss, of Geneva. In his early youth he lost his eyesight; his biographer, De Candolle, attributes this to his too great eagerness to read. He spent days and nights in reading and when his parents deprived him of artificial light at night to compel him to take a rest, he even tried to read by the light of the moon. At 17 he was almost completely blind. He was then engaged to Aimee Marie Lullin, who heroically remained true to him and finally married him seven years after. Through her eyes and those of a faithful servant, F. Burnens, who was also a great observer, he made studies of natural history which finally concentrated upon the inhabitants of the hive. The works of Reaumur and Bonnet drew him to this. He confirmed the discovery of Schirach that the bees can transform any worker egg into a queen by special treatment. He showed that worker bees who were supposed to be neuters could, in most instances, lay eggs that would hatch. He described the combats of queens with each other. He discovered that the queen was fecundated in flight. He studied the causes of swarming, the use of the antennæ, the production of wax, the building of combs, etc.

For these studies he devised what he called "the leaf hive," which opens like the leaves of a book, and on each of which leaves a comb is suspended. He also devised what we now call observing hives, hives with only one comb and glass on both sides, which he called "ruches plates" (flat hives), because of their shape. It was with hives of both these styles that he made the numerous remarks which he recorded in his "Letters to Chas. Bonnet," published in 1792 and republished in 1796 and in 1814 under the title of "Nouvelles Observations sur les Abeilles" (New Observations upon bees). He also published a memoir of the origin of beeswax, in 1804.

The latter memoir was incorporated in the Nouvelles Observations, in the last edition, composed of two volumes.

Huber's leaf hive had a popularity which lasted a number of years. The greatest obstacle to its use is the difficulty of bringing together the combs of a populous hive after having taken them apart, for they touch one another in their entire length and depth, except in the spaces left for openings for the passage of the bees. It is difficult to open and close a hive of this kind without crushing many bees, especially in the busy season. The elder Dadant tried them, and it was after accidentally crushing a queen while closing the hive that he discarded them, for the hanging-frame hive.



Adair's Section Beehive

D. L. Adair, of Hawesville, Ky., patented a hive similar to that of Huber, in 1867, and gave it publicity in both the early years of the American Bee Journal and in his "Annals of Bee Culture" which appeared from 1869 to 1872.

A little later, Moses Quinby abandoned his hanging-frame hive for a hive with "standing frames" somewhat similar to those of the Huber leaf hive. But his frames were held in position by a clamp which was slipped into a groove on the hive bottom. His frames also differed from those of Huber in having full bee spaces at both top and bottom, so that they touched one another only at the perpendicular ends which were made of lumber 1½ inches wide. So the difficulty of manipulation was lessened, since the points of contact were less numerous. The advantage claimed for these hives was that they made a closed body, which was surrounded with another hive body and bees were said to winter in them better than in hives with loose hanging frames, in which the air can circulate around the frames, at the top, bottom and ends.

The Huber leaf method was also followed by Adair in his honey sections, with the only difference that he made the top and bottom bars to overlap on the end bars. The Adair section was soon improved upon and gave birth to our folding honey section. So the Huber hive principle is still in use in our supers with comb-honey production, the difference being that the sections are enclosed in a case, while the Huber leaf hive was

formed of the frames brought together, with a dummy at each end.

In the American Bee Journal of July, 1912, we gave on the cover page a view of the apiary of A. B. Anthony, of Sterling, Illinois. The hive invented by Mr. Anthony opens like a book, more literally than the Huber hive. It is a model of ingenuity, for it is arranged to open in such a way that not a single bee can be crushed, the frames not touching each other. But the exactness of the requirements in such a hive has discouraged most people from its use. For popular use, hives must be simple enough to be put into the hands of entirely unskilled workers.

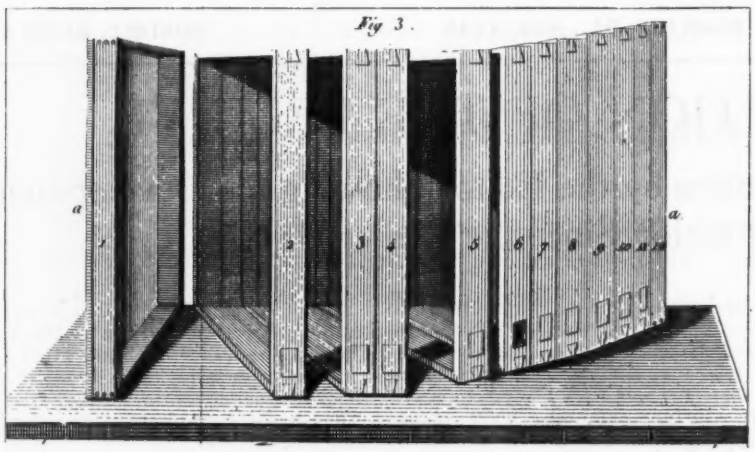


Fig 3.

The Huber Leaf Hive

The observing hives (ruches plates) of Huber were undoubtedly the ones which permitted him to make the numerous discoveries which he brought to light. The writer has often followed Huber's teachings with one of these hives. A single-comb observing hive, located within a house, by a window, or outside on a remote corner of the house porch or veranda and filled with a comb loaded with bees, is a source of endless study. There is no need of a queen, provided the comb contains brood less than three days old. You can watch the rearing of a queen, the destruction of the supernumerary queen-cells by the first queen hatched, often helped in this work by the neuters. You may even have occasion to notice the combat of queens. There is no end to the amount of experience that may be derived from the use of these "flat hives" with glass on both sides. Even combs built crooked and fastened to the glass will give you amusement and information, by enabling you to see how the bees work in the cells, to deposit honey or pollen or to rear brood.

The life of F. Huber, published in the "Bibliotheque Universelle" of February, 1832, and re-published in 1894 by Ed. Bertrand in the "Revue Internationale D'Apiculture" is interesting reading and we may translate it for our readers some day.

# Apiary Buildings and Their Equipment

By Morley Pettit

(Concluded from April)

I HAVE turned over in my mind many ideas for the efficient routing of supers from the hives to the extractor; but the completion of the building in addition to apiary work was all that spare time in 1917 would allow without permanently installing any machinery. So I think I will postpone the publication of definite plans further than to say that the garage has a door in the end facing the apiary as well as in the front. The hives in the apiary can be arranged so that a motor truck can be backed down the rows and loaded with supers for extracting, as a welcome substitute for the old wheelbarrow.

All supers are removed from the hives with bee-escapes, so the loading on the truck will be easy and rapid. Loads of supers from outyards, of course, go immediately into the garage at the front door to be unloaded directly to the extracting room. Here the supers can be moved either in piles on small trucks with castor wheels, as milady moves her dinner-wagon, or hung from trolleys on overhead tracks, as carcases are moved in an abattoir. It might be practical to run the overhead track out into the apiary and along over the rows of hives. A super-lifter for brood-chamber examinations might possibly be combined with this; but so many have been dreaming of super-lifters that I will shut up for the present.

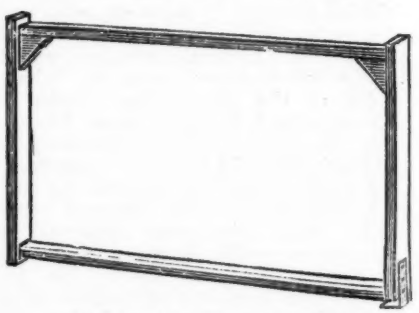
In any case, routing and machinery must be arranged to avoid backtracking as much as possible. With this end in view the door from the extracting room to the apiary is at the opposite end from the garage. A super-hoist may also be placed at this end. Supers will then come in from the garage, pass through the extractor and rest near the far door, to be taken to the apiary at night, or upstairs for storage, as the case may be. Outapiary supers will, in the spring, be handed down the trap door to the motor truck in the garage.

**Extracting Machinery**

With good steam pressure and a long-handled knife and well-built combs, one man can uncap for an 8-frame extractor, and a helper has too easy a time tending it. Where extractors are allowed to do their work thoroughly I believe there should be 16-frame or 18-frame capacity, with one to attend them and two, or at most three, uncappers. I am referring to Langstroth combs. This would call for good large capping melter capacity, a battery of four 4-frame or three 6-frame extractors, a pump and plenty of storage. I would heat the knives and melters with steam brought through well insulated pipes from a boiler in another room. That would remove the most objectionable feature of this part of the extracting, the over-heating and vitiating of the air caused by oil stoves burning in the room, and even steam from knives and melters might be taken care of to advantage by some system of condensation.

I do not know what the daily capacity of such an outfit would be, but would guess at from 7,000 to 10,000 pounds as a conservative estimate. I know that under rather unfavorable conditions, with one 8-frame machine, I uncapped and the helper extracted 3,500 pounds in one day last fall, and he had an easy time. If you say why such haste, I will refer you to the shortness of the time between light and dark honey flows in many sections, the importance of leaving honey on as long as possible for ripening, and the high cost of living.

The knife is a sandwich-knife with straight blade about 10⅛ in. long. A tinsmith added the copper jacket for steam. The handle is straight with the blade, eliminating the tiresome side-pull of the stock knife, and I wound it with tire tape for a better grip. The next improvement will be some sort of support for the other end to give leverage and save the operator's wrist. A modified bread-cutting machine might answer.



The Standing Frame of Quinby

**A Revision of Extractor Construction**

While we are installing extractors the stock machine of the manufacturer will stand some scrutiny.

The idea of an extractor or battery of extractors built in, as it were, or permanently installed, has not to my

knowledge been published before. If it has I would be obliged to any reader for the reference. All extractors are built for moving about without "taking down" in any way, and have had to suffer in some points on that account. To make them for permanent installation admits of a complete review of extractor construction with a view to revision.

What are the essential parts of an extractor? Among them are baskets for the combs, a reel to whirl them, supports for the reel, a screen to intercept the flying honey and a reservoir to retain it until drained away. For convenience, hand extractors were built in a tin can which combined reel-support, honey-screen and reservoir. Power extractors are built the same way. To overcome vibration caused by uneven loads, the beekeeper nails this can down and wires it down and sometimes braces it from the ceiling, and it continues to be a flimsy tin can which is no proper support for a real machine. The honey collects in the bottom and cannot be fully drained out without tearing the whole machine from its moorings. One would not expect to find a power machine in any other industry so little removed from its hand prototype.

The comb-basket reel might well have its upper and lower bearings fixed in a steel frame on a concrete base, rigid enough to resist all vibration after ordinary care is taken to balance uneven combs. The honey screen and reservoir is an entirely separate matter, and does not need to be a complete can at all; so long as it catches flying honey and conducts it along channels which will drain automatically and completely into the pump chamber. The latter might be built like a wax-honey separator to keep floating wax and honey from the pump.

I would use a battery of small reels in preference to a large one. They have greater centrifugal force, start and stop easier, and while one is stopped, fewer baskets are idle. The force of vibration from an uneven load in a small reel is less. A number of small reels could be placed in one set with only single partitions between them.

The Leaf Principle is used in these Specially constructed Hives of an American Beekeeper, made to be turned over for examination.

### The Honey Pump

I am thankful our building is on level ground so we can pump honey from the extractor to storage with a clear conscience. So many recommend gravity systems, but they all involve stair climbing or lifting combs or supers, which is work for the beekeeper. The pump lets the motor do it, and that is always cheaper. The only effect of the pump is to hasten granulation or if run when not full to cause foam by churning. The latter is easily prevented and the former is an advantage when selling granulated, and does no harm when the honey is to be heated for bottling.

### The Honey Room

Ranged around the wall in the honey room are the store tanks to which the honey is pumped through galvanized iron piping with rubber hose on the end for distribution from tank to tank. The capacity of these tanks suits the day's work so that night will not find one only part full. We have enough for at least three days extracting, as that is a minimum time for honey to "steele" before skimming and filling. They are on stands about three feet high, so that filling can be done on a table in a comfortable position. Pails as filled are crated uniformly and stacked in the shipping end of the honey room next the garage, where they are convenient to load into the truck for shipment.

Besides having plenty of light and capacity for two cars, the garage has a floor drain and running water for washing and will be equipped with small work bench and proper tools for all except the most difficult adjustments and repairs.

### Things Every Central Apiary Building Should Have

There are many points on which beekeepers will differ in the matter of apiary buildings and equipment; but certain things everyone should have are:

1. Cheerful rooms with high ceilings, large windows close together, and plenty of electric lights where the latter are available.
2. A power plant, gasoline or electric, connected by convenient line-shaft to extractors, honey pump, saw, emery wheel and whatever other power machines may be used.
3. Steam for uncapping, wax rendering, liquefying, feed making, cleaning, and perhaps for heating the building to make inside work independent of weather conditions. Question: How about a steam engine for

power in view of gasoline shortage and above-mentioned uses for the exhaust?

4. Running water and floors that can be washed down with hose. If necessary, a private water pressure system is a good investment in view of using it in dwelling as well.

5. That the building should be bee-tight goes without saying, and if you build twice as large as you think you will need it may be large enough.

Honey production has become an established business comparable in permanency and profits with any other branch of agriculture. Perhaps no other branch requires so small an outlay of capital for the same return. The best of practical equipment is not expensive, and the best is none too good.

AMERICAN BEE JOURNAL

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FRANK C. PELLETT, Staff Correspondent.

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# THE EDITOR'S VIEWPOINT

**Laying of Queens—**
**Nurse Bees**

Comments by C. C. Miller

In April American Bee Journal, page 130, M. F. Perry says he differs with me as to the number of bees required for a certain thing, I having inclined to the opinion that a pound might answer, and Mr. Perry suggesting 2 or 3 pounds. To be sure, the types make him say "less than 2 pounds, or, better, 3 pounds," but I'm pretty sure the printer or someone else dropped out a "Not," and that "not less than 2 pounds" was meant.

There is a pretty wide difference of opinion when one asks 2 or 3 times as many bees as the other, and it may not be out of place to inquire whether we are both talking about the same thing. To go back to the beginning, on page 28, January number, I was asked, "Assuming that I give a pound of newly-hatched bees and a strong, vigorous queen to a queenless colony with a large force of field bees, would the pound of nurse-bees be enough to nurse all the brood she could produce, say until the first of it be sealed?"

I replied: "I don't know enough to answer definitely. I'm inclined, however, to the opinion that all the brood an average queen could produce up to the time of the sealing of the first of it would be properly fed if a pound of newly-hatched bees were added. At that it might be hard to prove that some of the fielders did not turn in and help on the feeding."

Mr. Perry says: "A pound of bees, supposed to contain 5000 bees, say one-fourth remain in the hive as nurse-bees, that would allow a good queen to do only one-fourth of her duty." According to that it would take four times as many bees, or four pounds, to allow her to do her full duty. that would make us still farther apart.

But how do you know, Friend Perry, that "one-fourth remain in the hive as nurse-bees?" Isn't the number that remain a very varying quantity? In the early spring I suspect that less than half the bees go afield. I don't know what proportion stays in the hive on a hot day in a big flow; I wish I did. But have you any proof that it is as large as one-fourth?

You say, "A queen worth keeping will fill a comb with eggs in a day." If she keeps that up she will keep 21 combs filled. I've had some excellent queens, but I don't know that I've ever had one that kept 21 combs filled. Have you?

You say, "It will be 21 days before more nurses can emerge," and are evidently talking about feeding for 21 days. I don't know that it makes very much difference, but I wasn't talking about 21 days' feeding, only 8 days, for if you will look again you will see that the question specified "until the first of it be sealed."

You say, "Some bees are lost every day," evidently talking about bees of all ages, but please note that both in the question and the answer "newly-hatched bees" are specified. A newly-hatched bee is supposed to have before it about six weeks of life, so that none of the pound should die within 8 days, or even in 21.

Your conclusion is that not less than 2 or 3 pounds "is sufficient to build up a colony readily in the cool weather of spring." But the question was not how many bees will build up a colony, but how many can feed the product of the queen in 8 days. And I don't see that the cool weather has anything to do with it, for although the weather makes a difference about the number of bees that fly out, cannot a nurse-bee feed just as many babies in a cool day as in a hot one?

If I understand you correctly, you think not less than 2 or 3 pounds of nurse-bees should be added to "a queenless colony with a large force of field bees," in order "to build up a colony readily in the cool weather of spring." Even upon that point I'm afraid we would hardly agree. "A large force of field bees" is rather indefinite, but I would hardly think of it as being less than 25,000. Now, would you think me unreasonable if I should say that there was no need to add a single bee to a field force of 25,000 in order to build up readily in the cool weather of spring. At any rate, that's just what I do believe. Please remember that when a colony comes out of winter quarters there are no young bees, yet the colony builds up all right. You may say that many of the bees are practically young, having merely existed through many weeks without doing any work. Well, then, I'll give you a case where all the bees were field bees, in the fullest sense of the word. One year, a good many years ago, I moved a colony to a new location and set on its stand an empty hive to which the field bees returned, and to these I gave a queen. I cannot give details as to the building up, but I know that that colony, starting with nothing

but field bees, gave one of the largest yields of surplus of the whole apiary.

To answer the questions before us we need to know: 1. How many eggs a queen lays daily. 2. How many larvæ each nurse can keep fed. I'd like to know.

### Death of R. C. Aikin

Mr. R. C. Aikin, a former beekeeper of Colorado, and a writer of some note on apiculture, was taken ill at his home in Blessing, Texas, on March 11, and was removed to the hospital at Houston, Texas, on the 17th, hoping that he would improve; however, double pneumonia developed and on March 21, 1918 he quietly passed away.

No doubt, our readers will remember the many writings of Mr. R. C. Aikin in the Bee Journals when he was actively engaged in beekeeping in Colorado, several years ago. At that time he was considered an authority on apiculture and his writings on this subject were read with great interest by all. He and his wife have for the past few years resided in Blessing, Texas, and his death has closed the book for one of the best men it has ever been our privilege to know. We extend our deepest sympathy to the sorrowing wife and other relatives.

THE LATE R. C. AIKIN

### Death of J. L. Strong

One of the best known apiarists of Iowa, J. L. Strong, died March 7, after three years of suffering.

Mr. Strong was not only a capable apiarist and a noted queen-grower, but he was a man of great power of observation and method. If our readers will refer to the editorial in the third column of page 118 of the April number, they will see that Professor Kenoyer used the records made by Mr. Strong, during a space of 29 years, of weights of a hive and meteorological data. This little item shows the worth of the man. He was 72 years old.

His wife, family and friends have the sympathy of the beekeeping public.

### Free Advertising of Honey

Honey never had such free advertising as it is getting nowadays. The March number of "Physical Culture" contains a long article extolling honey for food. It is no more than honey deserves. But there was a time when it might have been difficult to get free encomiums of this kinds. As the French say: "A quelque chose malheur est bon," which may be freely translated to "It's an ill wind that blows nobody good." If it were not for the world struggle, which makes food scarce, the public would not be so carefully informed of what may be gained by large honey production and consumption.

### Illinois Foulbrood

The 1918 official statement on foulbrood does not contain any report. It contains only instructions on how to treat foulbrood and gives a copy of the law. It is published under the direction of the Illinois Department of Apiculture. It may be had of Charles Adkins, Director, Springfield, or of A. L. Kildow, Inspector. Putnam. Beekeepers who are in doubt about foulbrood should procure this and all other available information.

### Death of an Editor

We have received by private advices the news of the death of Mr. F. D'Autemarche, managing editor of "L'Apiculteur," the oldest bee magazine in existence. Mr. Sevalle, editor-in-chief, who has for years stood in the background, is again assuming the management.

The public announcement of the death of D'Autemarche has probably appeared in the November-December, for it is mentioned only incidentally in the January-February number.

### Against the Bee Killer

"Contro l'apicidio" is the title of a booklet of 34 pages published in Italy by the Italian Federation of Beekeepers. The author is Emo Perucci and the book is a straight aggression against the people who still kill the bees to get the honey. It contains a very thorough description of the different methods of transferring bees from box-hives to movable frames and shows the advantages of modern methods.

A similar work would still do some good in the backward counties of many of our most progressive States.

### Beekeeping Applied to the Liberty Loan

The Chicago Sunday Tribune of April 14 contained a cartoon showing the dollars of the third Liberty Loan under the shape of the bees of a swarm, making honey in 4¼ sections at the rate of 4¼% and stinging the Kaiser.

### Weak Colonies in Spring

Now is the time to watch your weak colonies. If you are in a locality where foulbrood is prevalent, such colonies as might have had the disease last fall and were strong enough to withstand the winter, will be in danger of being robbed out this spring, thus spreading the disease to your stronger colonies. Then, too, just before the spring honey-flow commences is the easiest time to discover the disease if it has developed. Work at your colonies when a very light flow has commenced, thus doing away with the dangers of robbing.

Weak colonies which have good queens may be saved if their entrance is narrowed down so as to be easily protected by the bees from ever-alert robbers. Some aid these colonies by the addition of a frame or two of brood from other colonies. But this, if done, should be done only when the weather is sufficiently warm so that the colony can easily keep such extra brood warm, and all brood given, or nearly all, should be sealed.

Queenless colonies, if weak, had best be united with other weak queenright colonies rather than try to save them by buying a queen and running the risk of her being killed by the old bees. If the colony is queenless and yet strong, it may be advisable to introduce a queen fresh from another hive.

### Variation of Time of Fruit Bloom in North and South

A letter from Dr. Miller a few days ago suggested that it might be interesting to note the period of the blooming of different fruit trees this year at Marengo and at Hamilton to see what a hundred miles variation in longitude means.

We will have more to say about this later.

# Fabre on Parthenogenesis

By the Editor.

THOSE of our readers who have been with us for several years will remember, perhaps, the writings of the celebrated naturalist, Fabre, and his great observations upon the bee-eating wasps, the philantus apivorus, and his description of the digger-wasps, such as the sphex, the scolia, the pompilus; the scientific way in which these insects sting their prey sufficiently to render it unable to defend itself and yet live until it is eaten by the young larva of the digger-wasp. (American Bee Journal, September and November, 1912.

Fabre's writings are exceedingly interesting, for although he was a botanist and an entomologist, his descriptions are as devoid of scientific words as he could make them. Besides, he spent but little time describing the anatomy of the insects. Of this he gives just enough to explain their actions. He was really a naturalist, studying the habits and ways of all these insects and describing what he saw in a delightful manner. The reader of his books accompanies him in his researches, so vivid are his descriptions. His entire life was spent watching the small but innumerable world of insects.

I bought his "Souvenirs Entomologiques" in his native language, the French, and am spending many delightful hours with him among the hymenopters. But although he spent years among the different varieties of bees, the honeybee seems to have been neglected by him, for he mentions only its enemies, the digger-wasps. It was, therefore, with great astonishment that I found, in the last chapter of the 3d volume, a reference to Dzierzon and parthenogenesis. It came in the following way:

In describing the "osmia," a family of mason bees, he explains the repartition of the sexes in the different cells. In this bee, the male is smaller than the female, just the opposite of our honeybee, if we consider the worker or neuters. But as the female osmia are all fully developed females, the comparison between them and their males is not in very great contrast with that of our queens and drones. The females are hatched in cells measuring about one-third more than those in which the males hatch. Fabre wonders, as we do, at what causes the sex of the egg and concludes that it is entirely left to the decision of the mother. But as to what determines her decision he remains ignorant. He writes:

"There remains to be told in what manner is made this facultative determination of the sexes. I know absolutely nothing about it. If I ever learn anything upon this delicate question, it will be due to some happy circumstance for which I must wait. Towards the end of my researches, I became acquainted with a German theory concerning the domestic honeybee and due to the apiarist, Dzierzon. If I understood it well, according to the incomplete documents before my eyes, the egg, such as it is, supplied by the ovary, already has a sex; always the same; it would be originally male; it is by fecundation that it would become female. The males would be the result of non-fertilized eggs; and the females of fertilized eggs. The queenbee, therefore, would lay female or male eggs according to whether she did or did not fertilize them, as they passed through the oviduct.

"Coming from Germany, this theory inspires me with profound distrust. As it has been admitted, with rash precipitation, even in classic books, I will surmount my repugnance to investigate Teutonic ideas and will submit it, not to the proof of arguments, against which a contrary argumentation may always arise, but to the irreversible test of facts."

HENRI FABRE

Fabre then goes on to explain that, according to the Dzierzon theory, the egg passes by the spermatheca which contains the seminal fluid and may or may not have its sex changed by the action or inaction of this fluid, becoming a female or a male, the sex being thus determined, at the will of the layer, by a pressure upon the spermatheca. Now comes the experience upon which he bases his denial of parthenogenesis:

"The Osmia, born industrious, dies working. When her ovaries are drained, she spends the remainder of her strength in useless labor, partitions, lids, hoards of pollen without use. The living machine cannot accept inaction, even when there is nothing to do. It continues its functions in labor without purpose. Let me point these vagaries to the adepts of the reasoning power of beasts.

"Before reaching these useless labors, my belated workers have laid their last eggs, the location and date of which I know positively. These eggs do not differ in any particulars from their elders. They have the same dimension, form, gloss and appearance of freshness. Their supplies have nothing exceptional, either, and are very well suited to males, closing the laying. And yet, these last eggs do not hatch, they shrink, wilt and dry up on the stores of food. At the terminal egg-laying of some osmia I count 3 or 4 sterile eggs; with another, 2 or 1. Another gives fertile eggs to the last.

"These sterile eggs, touched with death from their first appearance, are too numerous to be unnoticed. Why do they not hatch like the others which they so resemble? They have received from the mother the same care, the same victuals. The investigations of the magnifying glass show nothing that can explain the fatal isue.

"If our mind is free from preconceived ideas, we go straight to the explanation. Those eggs do not hatch because they have not been fertilized. Thus would perish every animal or vegetable germ that did not receive the vivifying impregnation. Any other explanation is impossible. Do not speak of the lateness of the laying; eggs of the same date from other mothers, are perfectly fertile. Once again, they do not hatch because they have not been fertilized.

"And why have they not been fertilized? Because the seminal bag, so small that it has often escaped my observation, in spite of my vigilance, had exhausted its contents. The mothers whose spermatheca preserved till the end a remnant of the fecundating element had their last eggs as fertile as the first; others with a seminal receptacle too quickly exhausted had their last laying smitten by death. This seems to me clear as daylight.

"If the unfecundated eggs perish without hatching, those that hatch and produce drones are therefore fecundated; and the German theory crumbles.

"What explanation will I then give to account for the marvelous facts which I have exposed? None, absolutely none. I do not explain, I relate. From day to day, more skeptical towards explanations which may be advanced to me, more hesitating towards those that I might advance myself, I see more and more before me rising, in the black cloud of possibilities, an enormous interrogation point."

So the reason for Fabre's positive denial of the Dzierzon theory of parthenogenesis lies in the non-hatching of the last laid eggs of some of his osmia. This looks convincing. Dr. Phillips has himself written that he "found that many eggs laid by drone-laying queens fail to hatch and, in fact, are often removed by the workers." But other facts rise before my mind which seem to indicate a conclusion quite different from that given by Fabre.

On page 13 of the American Bee Journal for January, 1916, I have given an experience of my young days which impressed itself vividly,

because I then knew but little concerning parthenogenesis. Let me repeat the statement, in part:

In my queen-rearing experience, it happened to us once, I believe it was in 1872 or 1873, that we found sale for seven first-class Italian queens, very late in October. The amount offered for those queens, by a lover of good stock, was so enticing that we decided, my father and myself, to sell the queens, which were in very populous colonies, and take the risks of being able to replace them the same season. Queens were not then to be bought as readily as they are now. There were still many drones, as the season had been very prosperous and late. But those queens, hatched early in November, had no opportunity to mate, for the weather turned cold suddenly and the time of their rut passed without any oportunity for flight, even though drones might have been present. The following spring we found ourselves with seven pretty and very prolific drone-layers. Their eggs were laid as regularly as those of fertilized queens, and their progeny hatched in the most uniform way, small drones from worker-cells and large, full-sized drones from drone-cells. I do not remember that any of their eggs failed to hatch. True, some of them might have been removed by the bees, unknown to us, but this does not seem likely. The little drones appeared as able-bodied as the large ones, and, according to the Dzierzon tests, must have been proportionally as good as the large ones. It goes without saying that we promptly replaced the queens with other breeding stock, and never did we have better early matings than that year, since thousands of drones were produced at a time when there are usually very few.

Being then between 21 and 22 years of age, I became very thoroughly impressed with this evidence of the correctness of the Dzierzon theory, which had, up to that date, appeared to me only as a possibility. I have, ever since, called it an established fact. But it is very easy to see why an observer like Fabre, who had no opportunities to make a test of this kind, should denounce the theory as entirely false. And yet it is very likely that the eggs mentioned by him as not hatching were rendered unproductive by some other cause than want of fertilization. In my experience I have seen two or three queens whose eggs did not hatch, but never had an opportunity of ascertaining the cause.

However great the genius of Fabre and his powers of observation, he was, nevertheless, subject to prejudice. Witness his antipathy to Teutonic teachings. Such an antipathy was natural in a Frenchman, writing after the crushing war of 1870, but it should not have led to anticipated prejudice. Besides, Dzierzon, born in Karlsmarkt, eastern Silesia, may have been of Slav descent, a Pole. So even the prejudice against him might have been ill-placed.

In his writings, Fabre constantly criticized Darwin and his theory of evolution, of constant change, slow and steady, due to the struggle for life and the survival of the fittest. Nothing that Fabre saw served to convince him of anything but the immutability of the habits and conditions of the minute beings which he watched so carefully and upon which he wrote so interestingly. It would have been worth while, if he and Darwin could have been placed face to face for a few hours and urged to discuss their views. They were both accurate naturalists and both after the truth. They were 14 years apart. Darwin was born in 1809 and Fabre in 1823. Neither took things for granted, but while Darwin tried to explain some of the phenomena which he saw, Fabre left, at the end of his studies and his wonderful descriptions, what he himself calls "an enormous interrogation point."

C. P. DADANT.

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# The Cycle of Seasons in Different Apiaries in Georgia

By J. J. Wilder

WE might include in this, almost the entire Dixie land except Florida, as the State of Georgia extends from the low, flat, level coastal lands to the Blue Ridge, and their honey plants, their season of blooming, etc in all the Southern States correspond very nearly with that of Georgia.

There is a clover belt in Alabama which extends up into Tennessee. This particular section I am not familiar with, as I have never kept any bees in it, and what I know is mostly through correspondence.

In this great clover belt is located the largest queen-breeder and shipper of bees in all the South. But few if any great honey producers are located in it. So we might infer that the season is more uniform, beginning early, having a long, almost even season, ending late, except as adverse weather conditions may bring about changes. It may be that the honey-flow never is heavy enough for a great honey harvest, but just enough to keep brood rearing going at a good pitch and some feeding done to keep this up at more adverse times, resulting in lots of bees and only small amounts of honey relatively.

The same condition prevails in northern central Florida in the partridge-pea belt, which has come under my own observation.

Let me go back to general conditions prevailing in Florida. Let no beekeeper think that our country is great for beekeeping because we have so many small honey-flows; that bees will keep strong and colonies continue to exist. Far from it. Our great loss in colonies actually occurs between these honey-flows and our winter losses are almost negligible.

A colony may show up well on a small honey-flow and at its end be very strong in bees and not light in stores, and before the next honey-flow collapse and be lost. There may be no nectar or pollen between. So we have to leave the honey and keep it equalized. Maybe the next flow yields a little and the next a little and so on.

Most of eastern, all of southern Georgia and largely southern Alabama have the same season and about the same honey plants throughout. Spring titi and the many different varieties of huckleberry grow widely over this great belt. The first warm days in middle February they bud and by the first of March they are out and the bees are bringing in nectar and pollen every day, weather permitting.

Maple is also out at this time, being very abundant along streams. Now is the beekeeper's chance. In this section it is not a matter of stores, but a matter of brood for the bees and as soon as these honey-plants are well started blooming, all colonies must be looked through carefully and the stronger ones with much sealed honey in the brood-nest must be given empty combs in the center. Bees must be carefully examined each week and as the weaker ones begin to strengthen and the weather gets warmer give them an empty comb, likewise.

On the third round, which is about the 10th of March, the strongest ones will need supers and on the next round general supering will be necessary.

Then we may expect swarming to start, and we are right in the main honey-flow which continues till about May 25, and at which time all the bees not in reach of cotton fields must be left with plenty of stores for summer and fall, or they will dwindle and some colonies be a total loss before winter.

Colonies in easy reach of the cotton fields can be extracted closely, leaving only a few pounds of honey. In late July, cotton and velvet-beans begin yielding and a slow, steady flow is on until the latter part of August, at which time all honey can be removed except 15 or 20 pounds to carry bees over fall, during which time they continue to breed more or less.

### The Red Hills

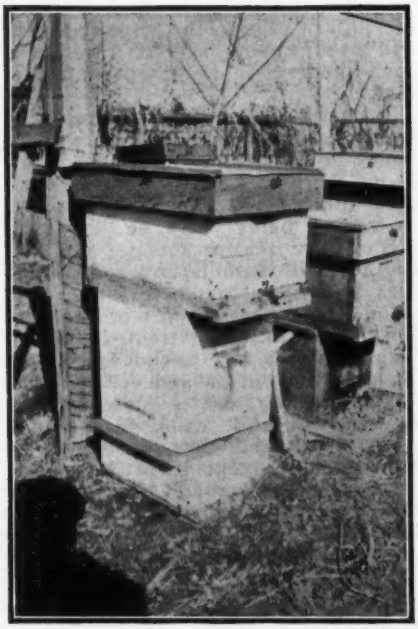
Leaving the low and level country, which is for the most part only a few feet above sea level and better known as the Altamaba Grit Region, with its larger streams in most places lined with white tupelo gum, its smaller ones with titi and flats almost a mass of gallberry, which extend the honey-flow on up to about June 1, we now pass up into a far more elevated section, which is several hundred feet above sea level, and with this we sweep over the largest section of Georgia. The soil is mostly red and the land for most part badly broken, but in it is some gray and sandy as well as rocky soil, which makes some change in the honey flora. In this region the poplar is the most important honey-plant. It lasts until early June. Here there are plenty of pollen plants and bees must have more stores for winter, say 10 or 15 pounds more. All increase should be made on this flow and at its close plenty of stores should be left in the brood-nest and some besides in supers. The blackberry is also a good yielder here and its flow may be expected towards the latter part of the flow from poplar. Along large streams there is some black tupelo gum which gives the first real honey-flow, and at the

end of which poplar comes. Here brood-rearing should be encouraged early.

In the sandy soil the winter huckleberry gives a yield which corresponds in amount and time with that of poplar. There is also some gallberry in the extreme eastern part of the State, but the flow is light and comes at the latter part of the flow from poplar.

In the Red Hills a strange thing occurs with reference to the flow from cotton. In a small part of this territory it yields well, elsewhere not at all, being only a pollen plant. Cotton is extensively grown nearly all over this section, yet it only yields here and there even, apparently, in the same soil and subsoil, and under similar conditions.

Goldenrod and asters grow more or less here and give a light flow just



J. F. Diemer's method of transferring with the box-hive below

before frost. They are a stimulant, but as a rule no surplus is expected from them.

**Blue Ridge Section**

Bordering on the Red Hills comes the Blue Ridge section, in which conditions are entirely different. With an elevation thousands of feet above sea level it is almost an unbroken forest and mountains; not so wide, but extending hundreds of miles forming the great water shed of Dixie land. More people keep bees here than anywhere else, according to population, and the bees are mostly in box-hives and log gums. Modern beekeeping is very slowly penetrating. In Tennessee it seems to have developed somewhat. As a rule, bees are naturally in better shape here than elsewhere, and I hope to live to see what beekeeping will be here in the near future.

In this forest bees follow nature more closely. If they are kept requeened, with plenty of stores, the only thing in the way of success is weather conditions.

Locust starts the flow in the latter part of April and gives a good yield for 30 days, though there is no inclination to swarm, so it is not time to make increase. After this, for 25 or 30 days, there is no honey-flow; then the chincapin and chestnut give a very light yield, bees consuming as fast as they gather. About June 20 a heavy flow comes all at once from basswood. Bees swarm and increase can be made and should all be done on this flow. Closely following this, sourwood comes on and a little swarming may be expected at the beginning of this flow, but it should be suppressed, for swarms at this time will not build up sufficiently strong for the winter. This flow lasts for about 40 days and is the best one in all that section and can be counted on for most of the surplus.

At its close a light flow may follow from asters, but it is not to be counted on, so plenty of stores must be left from sourwood.

Cordele, Ga.

## Winter Transferring

B. J. F. Diemer

THE final result of the experiment of transferring bees commenced in August and given in the January number of American Bee Journal has turned out very satisfactory. Out of the 38 colonies two failed to winter, one being queenless and the other short of stores in the upper hive. The 36 that were left came through the winter in good condition, plenty of bees, brood and honey. The box hives are still nearly full of honey, as there was plenty in the upper hive for them to winter on. In one of your letters you cautioned me against trying to transfer in winter the 18 that refused to transfer themselves in the fall. I decided that you were right and thought best to drum them up the first warm day in early winter. This I did by placing a hive body over half full of sealed honey and some pollen on the top of the box hive turned upside down. I was surprised at their readiness to go up in the frame hive; there being no brood in the box hive, it only took a few minutes to chase the whole bunch upstairs. I put the bottom-board under the hive body, leaving the inch hole open, so the bees could move the honey from the box-hive if they would. As it was quite warm today, I looked in all of them and found plenty of bees, brood and honey, all in the upper hive; but they haven't moved much honey out of the box yet. Perhaps they will as the weather gets warm. Perhaps some one would like to know how to get this honey out without melting it and having a muss. This part of it is past the experimental stage, as I have proved. Just bore a hole in the back end of the frame hive and a hole in the side of the box-hive and connect the two together with a short piece of rubber hose. The bees will do the rest if they have room to store the honey.

For several years I have bought all the box-hive colonies I could get, transferred them, gave them an Italian queen and in a few weeks they would look as good as new. A lot of box-hives in a neighborhood is as bad as a case of smallpox in a theater. You may be enjoying the play and at the same time catching the disease. But I am glad to say I have never seen a trace of foulbrood in any of them. Believe me, I am done cutting out old crooked combs and trying to fit them in a good new frame. Of course this has been avoided, but there is still room for improvement. Anyway I had lots of fun out of this job and will be keen to buy more box colonies.

Liberty, Mo.

## Co-Operative Selling Pays Texas Honey Producers

By Chilton Gano

THAT co-operative marketing can be made to pay right from the start was never better exemplified than in the case of the Texas Honey Producers' Association, which has been in operation only a year and a half and has already learned the secret of securing better prices and saving money in purchasing supplies.

The experience of this organization has been so extraordinarily successful that the writer believes every beekeeper should read about it. To convince readers of American Bee Journal that the story deserves to be carefully read from beginning to end, some specific figures on the success of the association will be given first, and the career of the association sketched afterwards. The instances were cited to the writer in February by Manager LeStourgeon, of the Texas Honey Producers.

A member of the association had 5557 pounds of honey for sale, packed in eight oak barrels. He was offered 8 1-3 cents per pound and was ready and willing to sell it. The association learned of the matter and asked to be permitted to handle the business. The request was granted and the honey sold to a New York firm at 12½ cents per pound.

Another member had several tons of rather strong and unpleasantly flavored honey which he had been willing at one time to sell for 4 or 5 cents per pound, for baking or feeding purposes. He decided to put it in the hands of the association, and it was sold at 10 to 12 cents a pound.

**Saved $76 on Cans**

In saving money on purchases of supplies results have been equally good. One member of the association who needed a car of honey can secured price quotations from his dealers, thus learning the lowest figures at which he could buy through that channel. He then placed the order with the association, and saved $76 on the transaction.

A non-member of the association not long ago sold 135 pounds of wax to a San Antonio dealer at 28 cents a pound. The association, at the time, was paying 30 cents a pound, at San

Antonio, and 35 cents f. o. b. Hamilton.

The San Antonio Express, in a feature article on the association's work, recently made an estimate of the savings that would have been made for the beekeepers of one little town in a year if, instead of purchasing supplies and merchandise in small shipment lots, they had followed the association's co-operative buying plan. The saving on freight alone, in the case of whole car lots, figured out at $640, and the saving through securing of wholesale prices figured at $704. The saving from association buying alone would thus have been $1344 for the season.

Other instances of the kind mentioned will be given in what follows. These are not special instances, but may be considered as typical of what the association is accomplishing.

**Co-operation Was Needed**

Generally unsatisfactory conditions as regards the marketing of Texas honey was what led the Texas Beekeepers' Association, after twenty-five years of existence as a mere social and educational body, to take up the matter of co-operative marketing.

In July 1916, extracted honey was a drug on the South Texas market, securing around 5 cents per pound, while comb honey could not be sold at 7 cents in the majority of cases. This was in spite of the fact that amber extracted was selling at 7½ cents in California and that Colorado honey grading with the Texas product was 8½ to 11 cents in Denver. In the words of Manager LeStourgeon, "The Texas price was an artificial value, born of ignorance on the part of the producers and a ruinous competition among themselves."

As regards the attitude of the Texas wholesale and retail trade towards Texas honey, it was as discouraging as possible. The handling of honey had been for years a very unsatisfactory business to the grocery trade, with no stability in price and no organized sources of supply. A man might buy a few cases and soon find a competitor far underselling him because of the latter having secured a bargain from a producer ignorant of what a reasonable price should be. There had also been a lack of uniformity in pack and grade, so that many merchants had ceased to handle honey through disgust at the great variety in appearance, flavor and color and inability to secure a steady supply of a uniform grade.

At the time the co-operative idea had been making headway in South Texas, enough farmers having become interested so that action was being secured at the State Capitol in obtaining a law authorizing the formation in Texas of the co-operative form of corporation. To the honey producers it seemed the logical time to do something drastic, and 79 beemen from 19 counties held a meeting at San Antonio in July to discuss marketing conditions. The result of the meeting was the adoption of a plan whereby every producing center should organize under one head for co-operative purchasing of supplies, co-operative selling through a sales manager, thus eliminating the brokers, and establishment of a central educational bureau to disseminate market information, teach best methods of packing and shipping, etc. It was decided that the information bureau should serve the entire industry, whether members of the association or not, and that all Texas beekeepers should be eligible to membership.

**Opposed by Big Business**

The association, which took the name of Texas Honey Producers' Association, did not have entirely smooth sailing at the start. Certain supply interests attempted to discourage the movement by even selling at a loss in order to quote lower prices than the association could quote. For a time cans for honey packing could be purchased in South Texas at a lower price than at any other point in the United States, in instances even lower than the carload price of the largest manufacturers. The better known bee supply houses, however, did not take part in this unfair competition, and the producers saw through it and presented a united front, as a whole.

They were strengthened in their stand by another result of their first meeting. For an immediate result of their determination to co-operate was the advance of honey prices in Texas 2 cents per pound. This took place within six weeks, and was accompanied by no advance whatever in consumer prices.

It may be said, in general, that the first decision to co-operate, in a section where prices are lower than reasonable, can usually be made to advance prices, if the producers stick to their guns. Exactly the same thing happened in California, when the prune growers of Santa Clara Valley organized. The speculators had been selling futures in the east at prices which showed they intended to buy from growers at 3 to 3½ cents. The growers got wind of these prices, and for the first time rebelled. They did not believe the reports of a very large crop circulated by the speculators, and they held a mass meeting and established a bureau to investigate. The investigation proved a normal crop only would be harvested, and the bureau advised growers to hold for 5 cents. Though there was no real organization, except of the flimsiest kind, a majority of growers heeded the advice, at least partially. Most sold at 4 cents or better, at any rate, and in the one season the single recommendation saved the industry half a million dollars. The success led to closer organization for co-operative marketing, and the California Prune and Apricot Growers', Inc., are now fully established and are already advertising "Sunsweet Prunes and Apricots," on a small scale.

(To be Continued.)

The Pussy Willow down by the creek

# My Neighbor's Garden

By C. D. Stuart

MANY years ago, my neighbor, although possessed of the conventional garden, is said also to have cornered that huge tract of nature's garden lying just above and beyond my apiary, fenced it, posted it and otherwise prepared it for his own exclusive enjoyment.

"Buckin' natur' right from the start," was the verdict of his old gardener when one morning he descended from where the chimneys of my neighbor's mansion loom like battlements against the sky, to repair a broken fence in the ravine near my beehives. "Just look a' that!" He waved his arm toward the expanse of wooded hills. "Two thousand acres! No man can keep all that land to hisself."

"Not while my surplus honey comes from it," I agreed.

The gardener's eyes widened. "What from?"

"Pussy willow down by the creek, first. After that the wild blackberry —not much nectar from it, but plenty of pollen for the brood. That square I sent you Christmas was Ceanothus honey."

"Thought I smelled Wild Lilac when I went into it!" he grinned.

"Same thing," I told him; "a flowering shrub."

"Wild Lilac! You'll have some crop this year; hills are blue with it. That last you gave me was good honey, too.

"It came from poison oak——What are you staring at, man?" I demanded; "your land is covered with it."

"It was covered," he corrected. "I dug out miles of it makin' trails for the Missus. Carried my swollen arms on a pillow for a week after!" He stopped and eyed me blankly. "Say, neighbor, poison oak juice is black, an' just natcherally burns a hole in you wherever it touches; that honey was white. Are you sure it was poison oak?"

"Positive. Nothing else in bloom when the bees made it."

"And I ate it!" Overcome by the thought, he sat down on a boulder and fumbled for a smoke. Suddenly he laughed. "That's a good one on the boss—takin' all that honey right from under his very nose!"

"Bees don't know they're trespassing. They can't read the old man's signs."

"Nobody reads 'em. Tell me! Why are signs like prohibition?"

"Give it up," I answered.

"Don't prohibit," he roared, his breath redolent with local option.

"Your boss owns the land," I reminded him; "if he gets joy—"

"He don't!" interrupted the gardener, and lovingly lit a long, black cigar. "Made 'im simply wild to see anybody else enjoyin' his property, an' he went broke tryin' to enjoy it by hisself."

"Well, he ain't exactly in the bread line," admitted the gardener, in answer to my scarcely-veiled curiosity; "but hog-tight fencin' an' fancy bull pups cost a lot. Then old Miss Riley got bit," he continued, between puffs. "She was pickin' blackberries on his premises, but the Court wanted to know who owned the dog. That one bite cost $5,000, cash money."

He smoked on, recalling other intimate details.

"Next, Jim McCarty's goats broke in. The dogs investigated, and old Billy landed on him, then went on browsin' just like nothin' had happened. Jim owned right up the goat was his, but pay damages? No, sir. Said no dog's neck was wuth $500, no matter what his pedigree; an' as fer three acres of Wild Lilac, that was only fit fer goat fodder anyhow—not knowin' it was Ceanothus an' good fer honey. Besides that, he said the goat was grazin' on his land that the boss had fenced in. Before the Court could decide which was a lyin', along came a fire an' burned the fence. Another $5,000 went to clear the titles an' buy new fencin'. All that," condescendingly, "was before your time."

I nodded.

"Fences are a lot o' worry," he mused. "Don't last no longer'n it takes to fix 'em. That's what put the old man in the hospital."

It was my turn to stare. My neighbor in the hospital! It seemed but a day since he had passed, peering this way and that as though to make sure the world were in proper order.

"Yep, nervous prostration. 'Course hunters do get in an' shoot a rabbit now an' then," the gardener continued; "but I've found 'em pretty decent sort o' fellows. They," with a last lingering puff, "sure smoke bull cigars."

"But the flowers—ferns and azalias—are they safe?"

He rose and picked up a roll of wire. "The people are harmless—mostly convalescents and lovers explorin' trails, or tourists lookin' for a view, or mebby a tramp bouscar round fer a warm place to sleep; them automobile picnickers alwa wantin' a spring handy to shad an'," with a sly wink, "your bees ter our poison oak."

Having no cigar and no mo honey till the new crop, I merely marked that it was hard luck when

Wild Lilac Bordered Trail.—Photograph by John R. Douglass

man couldn't enjoy his own garden.

"Too much of it; that's the reason. A cat's got no use fer two tails, an' one sting's a-plenty fer a bee, ain't it?"

"For all practical purposes," I agreed. "But if the bee had nine lives to protect, like the cat——"

The gardener gave the barbed wire an impatient twist. "Can't corner the earth and get away with it, not even if you had twenty lives. It's again' natur'."

The gardener is right. Again the Pussy willow has come and gone. The paths are fringed with clambering blackberry and the feathery bloom of Poison oak; the first blue haze of Ceanothus is on the hills; and my bees take their fill, unmolested. There is nothing to remind me that all this beauty is owned by an absent neighbor. It is as though the broad acres were mine instead. Indeed they are mine. Every curve of the shaded roads, every tint of foliage, every song of the streams, the fragrance, the sunshine, the panoramic glimpses of valley and hill and sky, all are mine—mine and the bees.' No man can take them from us, least of all the babbling old man who sits all day in a far-away hotel under the watchful eye of a trained attendant.

Los Gatos, Calif.

## Curing or Eradicating, Which?

By F. Dundas Todd

EARLY in the year 1911 I was invited to become a bee inspector for the Province of British Columbia, and my department chief asked me what I intended to do with any cases of foulbrood I happened upon. I asked a little time to consider the question, and this I devoted to going through all my bee literature, reading everything I found upon the matter and making note of results. Altogether I amassed a very considerable amount of data, and I gathered it all into two heaps. A very small one represented the region where it was claimed that foulbrood had been gotten rid of entirely, and remained free for a number of years,ten I think. The other big mass represented the regions where scores of men claimed to be curing foulbrood, but it was apparently still rampant in their districts.

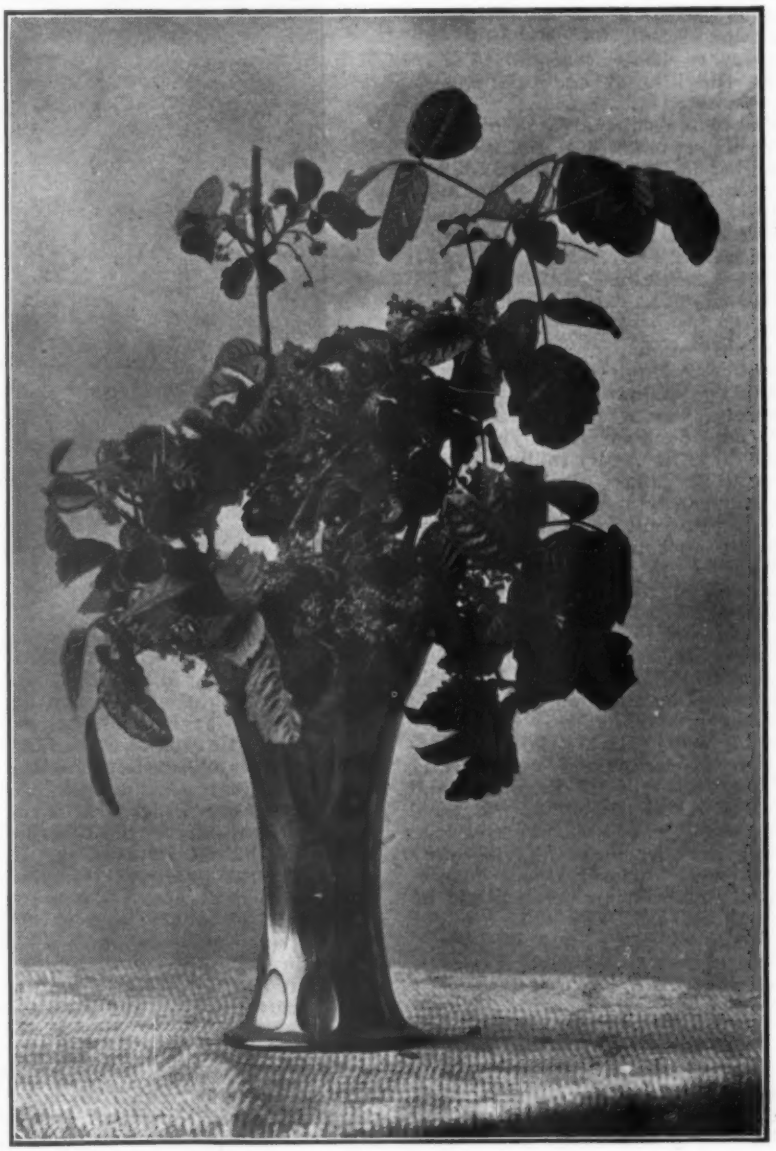
I carried the piles to my chief, and arranged them on his desk, remarking, "This big heap represents the efforts of many men who cure foulbrood, and still have it, this single sheet of paper tells how Belgium got rid of the disease in 10 years, and still remains free of it. I propose to follow the example of Belgium, not pretend to cure it, but to wipe out by fire everything that I find in contact with the disease. Such procedure will probably raise an awful howl, but I am game to see it through, if you think the experiment is worth making." He decided it was, and has loyally stood behind his inspectors from that day until now.

In 1914 I came in contact with American foulbrood for the first time, and during the last half of the year it kept me quite busy. I need not go into details, as they were given in an article that appeared in the July issue of the American Bee Journal, showing how I stayed by the proposition, stamping it out wherever I found it. Needless to say I got considerable advice as to how I really should have comported myself if I wished to behave according to Hoyle, but it was all carefully neglected.

Well, I now have had four seasons' experience of fighting American foulbrood and am able to give results, and armed with these to do a little talking back, as I think it is a poor game that is played all on one side. So I have gathered together a batch of literature for the second time, and had another good look at the situation.

The human race never gets very far in any particular phase of activity unless it devises a measuring rod adapted to the conditions, so that it can check results. I think if we had a good measuring rod to apply to the foulbrood situation we would not have been deluged with so much oratory. In looking over the recent magazine articles at my disposal I find only one man, Wesley Foster, who catches a glimmer of its need, for in July Gleanings he says: "In our experience with European foulbrood we find something to learn every day. It is hard to eradicate but easy to cure. What is meant by that is that an individual apiary can be cleaned up readily, but it is difficult to clean up a district comprising 20 apiaries." He states the proposition exactly as I saw it in 1911, so the standard I set for myself was this, in how short a time can I eradicate the disease from an infected district? One of my own beekeepers, a good student of apiculture, evolved the same idea when he learned I was burning infected cases. He said, "All right, I'll give you five years to see what you can do, and if you have no definite results by that time, then I'll want a different policy."

Well, here is a measuring rod provided for me, the combination of the ideas of these two beekeepers. If he



No more Poison Oak for the Missus.—Photograph by John R. Douglass

eradicates foulbrood from an infected district in five years, a foulbrood inspector is to be considered successful, if he does not, he is a failure. I wonder how many bee inspectors will toe the mark on that proposition.

The shaking system to cure foulbrood has been in vogue since 1891, when McEvoy introduced it to this continent; he published details in 1895, twenty-three years ago. It has been tried from Maine to California and from Ontario to the Gulf of Mexico, so let us see what its advocates have to say for themselves.

In the U. S. Department of Agriculture Bulletin No. 75 there is a paper written in 1908 by Dr. Burton N. Gates, on Bee Disease in Massachusetts. On page 30 I find a heading "Brood Diseases Can Be Controlled." Under it he says, "It has been thoroughly demonstrated that by judicious and persistent manipulation both of them can be successfully controlled and suppressed."

Then, to show what really can be accomplished, he says, "The State nearest to Massachusetts is New York, where the annual loss of bees alone is shown in the following figures:

| | |
|---|---|
| Previous to 1899, in a limited area the loss of bees alone is estimated at | $39,383 |
| In 1899, when concentrated effort to suppress bee disease was begun, it amounted to | 25,420 |
| In 1900 | 20,289 |
| In 1901 | 10,853 |
| In 1902 | 5,860 |
| In 1903 | 4,741 |
| In 1904 | 2,220 |
| In 1905 | 1,725 |

"In the other states the encouraging results of inspection and persistent effort to suppress the inroads of disease are similar."

Observe, this was a concentrated effort, continued for seven years. Yet, in the seventh year foulbrood was still present, in fact the cases of that year apparently amounted to 6.8% of what was present in 1899. There was assuredly no complete eradication in five years in this case, so it fails by the measuring rod provided by Foster and Brookes.

I would like to know the condition of that district today, twelve years afterwards, especially when I read in September Gleanings on page 719 the following note about this very same State of New York: "Chief Inspector Geo. H. Rea drew out the fact that bee disease, both European and American, had wiped out a good many small yards throughout the State. There were not half as many bees as were formerly kept, but inspection was now under way, and he hoped the disease would be brought under control."

After 18 years' experience thus is chased the great delusion.

Let us take all the references I find in the bee journals for the past year. In the American Bee Journal for January 1918, I find Mr. Morley Pettit giving a report of a meeting of the Ontario Apiary Inspectors and I am tempted to make a few quotations. The shaking system was begun in Ontario by McEvoy in 1891, and has been kept up ever since; so it has had 27 years' trial. For a great many years there have been sixteen inspectors in the Province, but it is only fair to say that they do not devote nearly all their time to the work. If curing foulbrood is as effective as it is held to be by its advocates, then in 27 years surely the disease in Ontario would be chiefly conspicuous by its rarity. Let us see.

Mr. Pettit says, "Unfortunately, comparatively few apiaries infected with either disease have been found to be entirely cured, yet it might safely be said that the expenditure of time and money from year to year has not been without benefit, etc." Again, "Seven hundred and seventy-eight apiaries were inspected and 203 of these were found to be diseased with either American or European foulbrood. Eight thousand five hundred and fifty-seven colonies were examined and 1,132 were diseased." That is to say 20 per cent of the apiaries and 13 per cent of the colonies examined were found affected with foulbrood. This after 27 years of curing.

Wild Blackberry thicket.—Photograph by John R. Douglass

In July Gleanings, J. F. Byers lets a shaft of light fall on the situation when he says, "European foulbrood is rapidly spreading in Ontario." But in 1911 a searchlight was thrown on the situation in that Province when one of its most famous beekeepers summed up the situation by declaring to me that what Ontario needed was at least 1200 bee inspectors. I am beginning to wonder if the disease has not been shaken all over the Province when the bees were shaken out of the hives.

I began my beekeeping career in Cook county, Illinois, and am naturally interested in conditions in that State, so I read carefully the report of Inspector Kildow on page 961 of December Gleanings. He says, "Notwithstanding more apiaries were examined than ever before last year, less disease was found than during the year before, proving that foulbrood is not only being held in check but that its ravages are being considerably mitigated." I see nothing in that sentence to indicate that the shaking treatment will eradicate foulbrood from a district in 5 years.

The situation in California is disposed of by P. C. Chadwick on page 924 of December Gleanings in a few words, "California has disease. There is not a county in the State, unless it be very remote, that has not disease." And this is the home of the big professional beekeeper. One of their beemen told me they were shaking all the time.

On page 271 of April Gleanings, I find A. C. Ames remarking about conditions in Iowa, "It is rare when we go through a county one year that we are able to go back in that county the next season; and we all know, if one has much disease, that it is very seldom that one clean-up will get all the infection." In plain English, shaking as practiced in Iowa, cannot possibly eradicate. So the situation is never in hand, and in short cycles the bee inspector begins the weary grind all over again.

Lastly, I want to point out that in the A B C of Bee Culture there is printed U. S. Census Statistics to show that in the whole country there was a drop of one million farmer, that is small, beekepers between 1900 and 1910, being a loss of about 14 per cent. The heaviest losses occur in the most densely populated States, running from 23 per cent in Pennsylvania to 40 per cent in Vermont. Utah tops the list with a drop of 49.5 per cent.

When in 1911 I looked at similar data as is given above it did not take me long to make up my mind that, as practiced, the shaking treatment was not all that it was cracked up to be. And I could not get away from the clear-cut statement about the condition of little Belgium, foulbrood wiped out in 10 years by fire, and none existing for 10 years or more.

Now for the other side, the test by fire. In 1914 I found American foulbrood in the following districts: Chilliwack, Coquitlam, Point Grey, Vancouver City and South Vancouver. From Chilliwack to Vancouver the

distance is fifty miles, the other districts lie between these two points. As far as I can trace, the disease has been in Vancouver City for over a dozen years, anyhow it was badly scattered over an area six miles by ten, small apiaries being common. In October, 1915, I had a hurry-up call from Nanaimo and found five affected apiaries spread over about ten miles in a straight line.

Each season I followed the situation closely, using what one editor described as heroic methods. I am now able, using Parliamentary language, to report progress. In 1917 I failed to find the disease in any of the districts mentioned, excepting South Vancouver. The heroic treatment by fire apparently will face without flinching the measuring rod of Foster and Brookes.

The Red Bud is one of the earliest of bloomers

Were it possible, I would like to make a statistical comparison of the results attained by the two systems of handling foulbrood; but alas, I cannot lay my hands upon any definite figures published by other inspectors. It seems to me there is a crying want for a uniform system of statistics for bee inspectors, so that the beekeeping world can ultimately develop a system of maximum efficiency, and decide definitely whether shaking or complete extinction is the most efficient and economical in the long run. The following quotation from an article in the Saturday Evening Post of January 12 is illuminating. Speaking of the famous Sir Eric Geddes, the writer says: "I once asked him what single rule had been of most service to him. Quick as a flash he snapped out 'the use of statistics. I statistize everything; knowledge is power, and the throttle valve of every business.'"

Since the above was written I find in Gleanings of January 1918, on page 27, the following paragraph written by J. F. Crane:

"E. G. Baldwin informs us that they at last have American foulbrood on the east coast of Florida, and considers F. Dundas Todd's article in the American Bee Journal as both timely and refreshing. I consider his method of combatting this particular disease quite out of date in this part of the world. I am not denying that his scheme of cremation is a sure remedy for every colony treated. So is burning a barn to rid it of rats a sure cure. The editor of the American Bee Journal advocates saving the hives, but why not save the combs and render them into wax?"

My answer is, the purpose of the bee inspectors' work, as I see it, is to eradicate foulbrood, that above all things. If at the same time he can save wax, hives and bees, so much the better, but these are emphatically of secondary consideration. I have a suspicion that in the mind of the average bee inspector the by-product is becoming more important that the regular output. Will Mr. Crane kindly oblige by applying a Foster-Brookes measuring rod to some of the districts in his territory and tell us the results? Let him put the emphasis on his real job, which is the eradication of foulbrood, and talk about the saving of by-products afterwards. I don't care how much wax he has saved, I want to know if he has cleaned up a district, and how long it took him to do the job.

Mr. Editor, I place my cards face up on the table and call for a showdown. I am tired of the generalities that have been printed in the bee journals for years; I want statistics. I want to find out if for twenty or more years the bee world has been chasing a great delusion, or can give solid reasons for the great faith it has shown.

Victoria, B. C.

## A Plea for Uniformity

By F. Greiner

A RESOLUTION was passed at the recently held New York State Grange meeting in Syracuse to the effect that manufacturers of agricultural implements be compelled to use standard bolts in the construction of all farm machinery. The beekeepers are not using any bolts in the construction of their honey boxes or other paraphernalia, nevertheless uniformity in and standardizing of the many things apiarists use is of great importance and should receive our most earnest attention. Mr. Dadant says in his recently issued catalog and price list of hives and apicultural implements: "We especially warn beekeepers against trying to invent a new style of hive, as thousands of hives have been invented which are not worth the paper on which the design was printed." I would add to this "and hives are now being invented which are no better."

But let us start with the honey-boxes, the sections. How much better it would be if all comb honey produced was stored in sections of the same size. We could not estimate such an advantage in dollars and cents. We may talk of settling on a certain length of the L-frame top-bar, or on the depth of the frame, its spacing, the uniformity of hives, etc. We may settle these points to our satisfaction and when we have done so the general public will not be affected. But when we unite on the section we will have accomplished something far-reaching as touching thousands and thousands, benefiting hundreds and hundreds of dealers and manufacturers besides benefiting every comb-honey producer in ever so many ways.

It is an idle question if I should ask "What has been gained by contriving the 3⅝x5, the 4½x4½, or any other odd-sized section?" The answer would be, "Nothing; only confusion has been produced thereby." The only point gained, it may be said, is the advantage of the no-beeway feature. That the 4¼ section should be better than any other is not my contention, but, since the most popular frame now in use is the L-frame, and as this frame has as its measuring unit the 4¼ square section, being 2 high and 4 wide, and further, since this 4¼ square section is the one most in use, I hold that it is the one we should adopt.

It is very true if we did not try out

new things, either those of our own invention or as suggested by other thinkers, we would not become wiser, we might stand still and never make any progress. We must do a certain amount of experimenting. I myself have in my yards several styles of hives; one has the jumbo feature, another the standard L, another the half-story frame or interchangeable sectional feature. Yes, and I have used the box-hive. Any of these hives have their valuable feature, but if I might begin beekeeping anew, I would not hesitate one moment but what I would select the regular single-walled Langstroth hive with its tiering up principle. I verily believe that all those successful honey producers who are now using other hives, jumbo-framed or miniature half-story hives, would be equally successful with the L-hive. It is a matter of adapting the management to the hive, that's all. In view of the many advantages that uniformity in hive and hive fixtures affords, it would seem to me that the time is now here for our beekeepers' societies, our apicultural writers, our various bee inspectors and other bee authorities to turn their attention to this subject of uniformity, and particularly to standardizing the section. Mr. S. D. House, in his zeal went so far as to demand that the New York State Association of Beekeepers' Societies at their last session in Syracuse go on record as establishing a standard section, if necessary to ask the legislature at Albany to pass a law making it illegal to offer comb honey for sale in New York State except same is stored in the to-be-adopted section. A committee was appointed at this meeting to have this matter in charge. As chairman of this committee I would ask the cooperation of all beekeepers in this and in other states. Let this subject be discussed from an unbiased standpoint; let us put aside our notions, make concessions for the good of the cause.

Naples, N. Y.

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## A Visit to the Food Administration

By Mary G. Phillips

ONE cannot help but be impressed by the change which has come over Washington since war was declared. It used to be that one could stand on the sidewalk outside the historic and picturesque Octogon House for hours at a time and see nothing more exciting pass than an old-fashioned barouche drawn by ancient horses, and driven by a still more ancient colored driver, but now if you stand there for more than a minute or two, you are jostled by the passing throngs of hurrying people, and instead of the faded upholstery of the barouche your eye catches glimpses of shiny enamel as the autos speed past. The sleepy, indolent air of the streets is a thing of the past, swept away by officers in khaki striding by, groups of young business women hurrying along, by sailors, civilians, foreign officers in vari-colored uniforms, all wearing the air of going somewhere with a purpose.

If you follow the stream going south you will find that most of the atoms which make it up are headed for one of the large gray buildings which now form a drab background for the Spanish beauty of the Pan-American building, the classic marble of the home of the D. A. R., and the white simplicity of the Red Cross building. The low, modest, gray structures are unpretentious, and of temporary construction, but what they lack in artistic beauty is made up by what one discovers is going on inside. The streets surrounding the tremendous area which they cover are lined all day with automobiles, and up and down the few steps at the entrances someone is always coming or going. One of these buildings is marked "Food Administration," and the minute one enters, the atmosphere of work is felt—work tremendous in quantity and importance.

Just inside the door are desks as in a hotel lobby, where you inquire for the person you desire to see. He, or she—frequently she—is telephoned to, and a boy acts as guide through a labyrinth of halls, up stairs (there are no elevators), round corners, past innumerable doors, until you find yourself entering a large, light office, where the person you wish to see comes forward cheerfully and courteously, ready to tell you anything you wish to know.

Of course, you wish to know everything, and as you imbibe knowledge your respect and wonder for the great mind at the head of the Food Administration increases by leaps and bounds. You learn that there are many divisions of the Food Administration, each division being divided into sections, each with its staff of specialists from all parts of the country. Every commodity has its section, or if it is specially important, like sugar, it has a division devoted to it. Then there is the Educational Division, which includes a Women's Magazine Section, a Farm Journal Section, a Library Section and many others. As you meet more and more of the workers, each wearing a Food Administration button, you cannot help but feel their tremendous earnestness, their enthusiasm for their work and their devotion and unswerving loyalty to Mr. Hoover.

A young girl in the Farm Journal Section said to me: "You must go upstairs and see the muffin exhibit that was made for the State men when they came here for a conference this week." Of course you know that each State has its food administrator, but do you know that frequently these men come to Washington for personal conference with Mr. Hoover? Those are the days when it is wise to keep away from the Food Administration Building, for no one has time for any individuals who are not "State men." We went upstairs and down long halls until we came to the conference room. At the front of the room someone was talking to a group of twenty or thirty people; at the back stood a camera man photographing muffins with the help of the artist who had made them and who was carefully cutting them in half to show the texture. There, on plates, were at least fifty different kinds of muffins made in the kitchen of the Food Administration, and not one had less than 50% wheat substitutes, many of them contained 75% wheat substitutes, and some were 100% corn flour, rice flour, barley flour or buckwheat flour. And what is more, every one that I tasted was palatable as well as good to look at. They were tender and light and show what we can do if we try. Miss Roberts, who had taken me to see the exhibit, turned to say: "Well, I made chocolate cake with 75% buckwheat flour this week that was delicious, and my mother is now making all her bread with at least 75% wheat substitutes." There is the spirit of the Food Administration workers—they are more than living up to the food pledge! They are not like the woman who was heard to say recently, "All this talk about wheat substitutes passes me by!" And that woman was knitting socks for her nephew at the front, while talk of wheat conservation "passed her by!" It seems incredible that that could have been said in Washington with those thousands of earnest people in the Food Administration so near at hand.

On every office wall in the Food Administration building are posters of food conservation, many of them beautiful pictures, all of them with forceful sentiments—"Food Will Win the War," "Eat Less Wheat, and We'll Beat!" "Serve Simple Food, and Just Enough." Then the walls of the halls are utilized to display posters made by school children of different parts of the country. These are well done and the educational work that they accomplish for food conservation is obvious. Some showed fruits and vegetables in artistic groups with "Eat These" below them; others showed bags of sugar, fat pigs and red cows with "Send These Abroad" beneath. One picture evidently by a small youngster, was a sugar bowl, with "Let Me Alone" printed on it.

The Library Section is a most interesting room where exhibits are prepared for Public Libraries everywhere in the country. While posters carry their message, they may be forgotten, but who can forget an array of tiny toy soldiers with bayonets pointing toward a herd of cows and pigs with the legend, "Back, Meat! Shipping Space all Taken!" Near by is a toy train, labeled "Wheat," with soldiers in a line beside it, saying "Forward, Wheat! We

Will Get You Across;" That was the sentiment expressed by everyone with whom I talked that day—deep regret that the meat which has been saved and was at last on the Atlantic seaboard could not be sent across for lack of ships. Wheat is needed most—that will have to go—the meat, for which there is not adequate storage space, will have to be eaten. Frederick Palmer, Military Censor for the American Expeditionary Force, was undoubtedly right when he said in Washington not long ago, that "every man, woman and child in the country should be talking ships, ships, and yet more ships."

The wheat shortage is more acute than it has been at any time since the war began, one of the saddest parts of it being that in 1917, 11,000,000 bushels of wheat were sunk by German U-boats. That is why the Food Administration's most insistent drive is to save the wheat. If we are to furnish the allies with the necessary proportion of wheat to maintain their war bread from now until the next harvest, and this is a military necessity, we must reduce our consumption to approximately 1½ pounds of wheat products weekly per person. That is 78 pounds per person per year, or about half as much as we have been consuming if we have faithfully followed the food pledge. While up to this time we have been asked merely to limit ourselves to 150 pounds per person per year, the soldiers have been eating wheat at the rate of only 131 pounds per person per year. They must have a full allowance, and it is so little for us to do here at home—merely to eat corn and oats, of which there is a plenty, and to use more potatoes, of which there is a surplus, in order to give our brave soldiers and allies the needed wheat. There are many thousands of families in the country using no wheat products whatever, except a very small amount for cooking purposes, and they are doing so in perfect health.

No doubt every beekeeper's wife is working "from her eyes up" in her efforts to use the substitutes for wheat that are available in her community. If you can get buckwheat and cannot get rye, try out all the buckwheat recipes you can find, and experiment yourself, carefully, of course, using a good bread recipe, and substituting the buckwheat for the greater part of wheat called for. I have tried all the substitutes I could buy, using the same recipes all the time, and although the family like some of the breads better than others, they have eaten them all with relish. If we serve purely wheatless breads two or three days out of the seven we will be doing no more than our share, which should be twice as much as we are asked to do.

The following recipe is a special favorite with my family:

**Mush Rolls**

1 pint of liquid (generally half milk, half water).
½ cup of white cornmeal.

Cook these together for one hour, then cool until lukewarm. Then add
1 tablespoon of shortening.
1 tablespoon honey.
1 teaspoon salt.
1 yeast cake dissolved in ¼ cup warm water.
Enough flour to make a stiff dough.

Knead and let rise until double in bulk (about 3 hours). Knead again and shape into rolls. After the second kneading, they are slow in rising, but if set at night, using only ½ a yeast cake, they are ready for lunch the next day.

On days when the yeast bread gives out and we are ready for a change from corn bread, we like the following:

**Oatmeal Mush Bread**

2 cups of cold oatmeal porridge.
1 cup of corn meal.
½ pound of dates or raisins.
1 cup of milk.
1 tablespoon of salt.
2 eggs.
2 teaspoons baking powder.

Put the cold oatmeal and milk into a double boiler over the fire. When hot, slowly stir in the corn meal. Cook until the mixture begins to thicken, take from the fire, add the beaten eggs and the baking powder. Pour the mixture in a greased shallow baking pan, the bottom of which has been covered with the chopped dates. Bake in a moderate oven for a half hour.

Another quick bread without wheat is this:

**Corn Meal and Hominy Bread**

1 cup cooked hominy.
1 cup milk.
1 tablespoon melted butter or vegetable oil.
1 cup white corn meal.
2 eggs.
1½ teaspoons salt.

Mix the ingredients and bake 30 minutes in a moderate oven.

Hominy grits is a most satisfactory form of corn, for it can be used in so many and varied ways. It serves as a breakfast cereal, being specially good when raisins are added. Then it is splendid to use on your meatless day, in the following way:

**Baked Hominy Omelet**

Soak and boil 1 cup of hominy grits. When well done and while hot, stir in 2 eggs well beaten.
½ cup sweet milk.
½ tablespoon shortening.
¾ cup of grated cheese.

Season with salt, pepper, paprika. Put in baking dish and bake in hot oven until brown (about twenty minutes). Serve hot.

**Hominy Pudding**

2 cups cooked hominy.
1 cup molasses.
1 cup raisins.

Bake in a moderate oven about 30 minutes and serve hot with milk or a lemon sauce.

Do not forget that we are on the battle line, and these recipes are part of our ammunition! The enemy must not break through our wheat line!

Washington, D. C.

## A Watering Place for Bees

By C. W. Brimhall

THE cut shows a watering place for the bees, made of a half of a paint barrel. It is placed on the back side of the honey house and under an eaves spout, which fills it when it rains. In the barrel is a float made by nailing lath on strips of pine. After nailing, the float is cut

A Good Watering Tub for Bees
C. W. Brimhall

in circular form to fit the barrel. I use two floats so that when one gets water logged it can be set in the sun to dry out, while the other keeps the bees from drowning. In hot weather the barrel should be scrubbed out to keep it fresh. If turned over and cleaned out just before a good shower, it will be promptly filled again.

Schaller, Iowa.

## My Experience With European Foulbrood

By F. Kittinger

Read at the Wisconsin State Convention, December, 1917.

I FIRST discovered European foulbrood amongst the bees of my home apiary during the month of May, 1916. The disease developed from a queen purchased during the fall of 1915, from what was supposed to be a reliable source.

The colony that developed the disease happened to be one that was wintered in a house apiary, and as the colonies in the building were well supplied with honey in the fall, they were not examined until late in the spring. When I examined these colonies. I found nearly all more or less diseased.

All colonies that had been wintered in the cellar, and had been set out in this same yard, were examined early in the spring and no signs of disease discovered. After this early examination of the cellar-wintered bees, and before the disease was discovered in the building, I moved colonies from the home yard to both of my out yards. Some of the colonies that were moved had evidently contracted the disease between the time they were examined

early in the spring and the time they were moved, as the next time I examined them I found diseased colonies that had been moved to both out yards.

Several of the colonies in the home yard that were near, or in a direct line of flight with the diseased colonies in the building, showed signs of disease early in the season, while the rest of the yard was comparatively free from disease until later in the season.

As the disease did not show up very bad until after the main honey flow, we secured a fair crop of honey from all but the few that were badly affected—a dozen or so colonies.

As soon as I discovered the disease I killed the queens in all the most badly affected colonies, and ordered young Italian queens from a reliable southern breeder for requeening. All colonies so requeened showed up free from disease in the fall, and were in a No. 1 condition for winter.

Expecting a wild-fire spread of the disease in the spring of 1917, I ordered 100 young Italian queens for delivery during May of this season.

The spring of 1917 found us with something over 300 colonies in fair condition. When these colonies were examined late in April and early in May very few showed any disease. This examination was followed by 7 or 8 days of very unfavorable weather when hardly a bee could fly. As soon as the weather was again favorable several colonies that were marked O. K. at the first examination were again examined. At this time it was found that the disease had spread so that nearly all colonies were affected—some being fairly rotten with the disease.

The first of my southern queens arrived the latter part of April, and about 80 per cent of my order reached me by the end of May. Owing to unfavorable conditions in the South, some twenty queens did not reach me until early in June.

As fast as a batch of queens arrived I killed the queens in the most badly diseased colonies and introduced a young queen at once. Early in the season I paid no attention to queen-cells, never opening a hive until the queen had been in a week or ten days. I think I lost about 15 per cent of the queens so introduced. The greater part of my loss I think was due to the very unfavorable weather for the work at the time.

All diseased colonies that were so requeened early in the season cleaned up the disease and stored a good surplus of honey.

Having been able to requeen only part of the affected colonies early, it was impossible to get up a sufficient field force in a great many colonies. Our average per colony for the season was thus greatly reduced by lack of sufficient field bees during the height of the flow.

I also used another 100 queens this fall, having killed off the old queens just before the end of the basswood flow. Eight days after killing the queens all cells were destroyed, and the colonies allowed to remain queenless until all brood had hatched before requeening.

I lost more queens by this system than where the young queen was introduced at the time the old queen was killed.

For my part, to clean up the disease, I prefer to get young Italian queens the latter part of April or early May. Unless one can do the requeening early, so as to get a good force of workers from the young queens in time for the honey flow, I think it best to double two or three colonies into one. I find there is no use trying to have weak colonies clean up the disease—double them up.

My system of doubling up weak colonies is to haul them to an outyard and pile two or three high. As soon as they have marked their location shake all bees into one body, and give a young Italian queen. Take all surplus brood-combs and put above a queen excluder over a strong colony. No bees return to the old stand by this system.

Owing to the lack of help it was impossible for me to requeen all colonies this season, but I intend to requeen all that show disease another spring, hoping thereby to have the disease under control.

Franksville, Wis.

[The attention of the reader is called to the following paragraph in the above interesting article:

"Eight days after killing the queens, all cells were destroyed, and the colonies allowed to remain queenless until all brood had hatched before requeening. I lost more queens by this system than where the young queen was introduced at the time the old queen was killed."

The above experience is exactly in line with the editor's own experience. Many people think a colony should be made queenless some days ahead in order to introduce a queen successfully. We believe, and this experience indicates, that the safest introductions with the cage method are achieved where the colonies were not allowed to be without queens for a single minute. It goes without saying that in the present case the colonies needed to be queenless for some days in order to help do away with the disease. But Mr. Kittinger's experience is of value as an object lesson in the matter of queen introduction.—Editor.]

# BEE-KEEPING FOR WOMEN

Conducted by MISS EMMA M. WILSON, Marengo, Ill.

### Eight and Ten-Frame Hives

Miss Emma Adkins is reported in the Beekeepers' Item as having made special observations this year in apiaries where 8-frame and 10-frame hives were kept side by side. She says, "A good many of the colonies in 10-frame hives made a fair crop even in this worst of all seasons, but those in 8-frame hives did little or nothing."

### Sugarless Desserts

Eat less candy; use less sugar in coffee, tea and chocolate; eat more fruit, nuts, popcorn, honey and syrups. A frosted top on a cake is a sign of criminal thoughtlessness at a time when millions of children in Europe are dying of tuberculosis caused by under-nourishment.

Here are some sugarless recipes, worked out by the United States Government, some of them in cooperation with the Universities of Ohio and Missouri:

Hot Rice or hasty pudding (cornmeal mush) served with a sweet sauce makes a simple, wholesome dessert. Chopped raisins or dates added to either, but no sugar is needed.

### Honey Sauce

1 cup honey.
¼ cup water.
1 tablespoon butter substitute.
¼ teaspoon salt.
¼ teaspoon cinnamon.
A dash of nutmeg.
Juice of 1 lemon or 2 tablespoons vinegar.

Boil together 15 minutes. The juice of 1 orange and grated peel may be used instead of lemon and seasoning in this recipe.

### Popcorn Candy

1 cup syrup.
1 tablespoon vinegar.
2 or 3 quarts of popped corn.

Boil together the syrup and vinegar until syrup hardens when dropped into balls or fancy shapes for the Christmas tree. Little popcorn men will please the children. Mark in the features and outlines with melted chocolate.

Either honey, maple syrup, molasses, white cane syrup or corn syrup may be used.

### Self-Spacing and Loose-Hanging Frames

In the well timed article of G. C. Greiner, page 55, February American Bee Journal, he speaks of giving frames of sealed honey in early spring, such frames having been kept over winter for this purpose, a proceeding which deserves the highest commendation. He says: "Every side-comb of every hive was taken out and glanced over, and when found empty or insufficiently supplied was replaced by one or two combs of honey. In connection with this observation, I wish to emphasize the great convenience of the loose-hanging frame and its superiority over any self-spacing device. A self-spaced frame would have greatly hampered this work and required much more time."

Coming from a man of Mr. Greiner's experience, this expression of opinion would incline one to believe that loose-hanging frames are to be

preferred to those that are self-spacing. Yet "in this locality," where frames of both kinds have been used by the thousands, self-spacers are decidedly preferred. They have the important advantage when placing frames in the hive that not only is the spacing done exactly, but almost instantaneously. With self-spacing frames, even if one had such marvelous eyes that a small fraction of an inch could be measured, each separate frame must be slowly adjusted into place, the whole operation taking many times as long as with self-spacers. And this difference in time occurs every time the frames are handled, so that those who go through their hives many times in summer—and with many good beekeepers it occurs every ten days—will lose very much more time in summer with loose-hanging frames than they can gain in the one operation in question, which occurs only once a year, if it occurs at all.

Even in that one operation, there must be something wrong if there be any real gain with loose-hanging frames. If the self-spacing combs fill the hive quite full, and there is no dummy, then the difficulty of getting out the first frame is so great that one may well prefer loose frames. But there should never be such crowding. There should be a dummy easily withdrawn, after the withdrawal of which the loose hangers have nothing on the self-spacers.

Another item in the case is that with self-spacers the frames are always held square, bottom-bars as well as top-bars being properly spaced. With frames hanging loose, no matter how exactly the top-bars be spaced, there is always a chance for the frames to get out of square, so that occasionally bottom-bars swing so close that the bees glue them together.

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**What We Eat, and What Happens to It**

Under the above title a series of articles is being published in The Ladies' Home Journal, in explanation of which that periodical says:

"Up to now nearly all that we have known of what we eat when the food reaches the human stomach has been learned through the use of the stomach pump, X-ray examinations, or from experiments made on the stomachs of dogs. A direct method, however, has recently been developed in the Department of Physiological Chemistry of the Jefferson Medical College, of Philadelphia, devised by Dr. Martin E. Rehfuss, of Professor Hawk's staff, whereby it is now made possible to follow the transformations of the food that we eat, as it is actually digested by the human stomach, at every stage of the digestion."

The paragraph below is taken from the article in the February Ladies' Home Journal. It contains nothing strikingly new, yet appearing where it does, and meeting the eyes of so many thousands of women who never see a bee journal, it cannot fail of having an important influence. Let us hope that the statement that "Our children would be better off if we had them eat more honey and less candy" may arrest the attention of many an interested mother:

**What Does the Stomach Say to Honey?**

"Honey is about 75 per cent sugar, the principal 'sweeteners' present being glucose, fruit sugar and cane sugar, the latter being present in very small amount. The flavor of the honey is due to certain volatile substances which the bee extracts from the flower. Bread and honey is a combination which looms large in the average juvenile eye. It has good food value and is well digested, provided the child can curb his desire to use more honey than bread. If we take milk along with the bread and honey we have a very satisfactory luncheon. Our children would be better off if we had them eat more honey and less candy. The same is true of the syrups and of molasses; and the more old-fashioned they are in their making, the better."

**Short Course at Ames, Iowa**—The second annual beekeeping short course will be held on May 13 to 18, 1918, at the Iowa State College, Ames.

In view of the necessity of increased honey production this year, the course will be made very practical and will include phases of management and practice in two apiaries.

Several successful commercial apiarists will assist us. If you are really anxious to make a success with bees and want to learn more about them, attend this course.

Opportunities for commercial beekeeping were never better and honey is now regarded as a food, not a luxury. The demand far exceeds the supply.

Many ladies have signified their intention of meeting with us and all are welcome. There are no fees and rooms and meals can be obtained at reasonable rates. The course is open to all interested in beekeeping. Programs can be obtained from F. Eric Millen, Ames, Iowa.

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**Corrugated Paper**—Get large boxes of the heavy mill board, corrugated paper second choice; cut down the corners, lay out flat, paint one side with coal tar; then lay it, tar side down, in front of the hive to kill grass. It is surprising how long it will last.

DR. BONNEY,
King Bee.

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**Honey by the Ton Going to Waste**—One eastern North Carolina county produced 35 tons of honey in 1917, reports Mr. Franklin Sherman. The beekeepers in this county assert that with proper distribution of bee-yards three times as many bees could be kept in the county with equally good results. Even allowing that 1917 was an unusually good honey year, the county could produce 100 tons of honey in average years if it were fully stocked with bees which were managed by good beekeepers. Yet this county does not include 10 per cent of the honey-producing plants of the eastern section—in other words, over 1,000 tons of honey are produced by the native plants of eastern North Carolina in average years, of which scarcely one-tenth is gathered for the uses of man. Think of what this means when honey is selling for around 15 cents per pound. —Extension Farm News, North Carolina.

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**The Northern Pennsylvania Beekeepers' Association** met in Annual session at Towanda, Feb. 28. The meeting was well attended. The membership now numbers 35. Among the good things on the program was Prof. J. G. Saunders with his movie bee film. Also Chief Apiary Adviser Geo. H. Rea, besides local speakers. The next meeting will be in the nature of a field meeting and picnic combined, to be held in June at the home of the Secretary. All beekeepers welcome.

HARRY W. BEAVER,
Troy, Pa. Secretary.

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**Massachusetts Federation of Beekeepers' Societies**—The following report is interesting from its federation features, aside from the fact that it shows activity on the part of Massachusetts beekeepers. In union there is strength and the example should be followed in every direction:

Each year there is an advance in beekeeping, which now requires the co-ordinate working of beekeepers. To this end, at Worcester, Saturday, March 23, an important gathering of the beekeepers of Massachusetts was held. There was a wide and representative attendance. Among those present were the Presidents of each of the five local beekeepeers' societies of the State, together with Secretaries and delegates from these societies. Absolute unity, enthusiasm and earnestness prevailed with but one aim in view, the formation of a "Federated Massachusetts Beekeepers' Association." By-laws were formulated and adopted. It was voted to incorporate. As the business of the meeting was rapidly transacted, the following officers were soon elected:

President—Mr. O. M. Smith, of Florence.

Vice President—Mr. O. F. Fuller, of Blackstone.

Secretary-Treasurer—Miss Dorothy

Quincy Wright, of Chelmsford.

The Presidents of each local Beekeepers' Association being present, announced three delegates to the Federated Association, whose terms of office were, respectively, one, two and three years, and in the order enumerated below:

Berkshire County Beekeepers' Society—Mr. C. M. Musgrove, Pittsfield; Mr. H. E. Hume, Dalton; Mr. L. D. Case, Pittsfield.

Eastern Masachusetts Society of Beekeepers—Mr. W. Schweitzer, Boston; Mrs. R. Goodenough, W. Roxbury; Mr. S. L. Davenport, Hathorne.

Hampshire, Hampden Franklin Beekeepers' Association—Mr. A. C. Andrews, West Springfield; Dr. D. D. Gorton, West Springfield; Mr. O. M. Smith, Florence.

Massachusetts Society of Beekeepers—Mr. H. C. Britton, Middleboro; Miss Dorothy Quincy Wright, Chelmsford; Mr. F. W. Frisbee, North Andover.

Worcester County Beekeepers' Society—Mr. W. E. Parker, West Boylston; Mr. O. F. Fuller, Blackstone; Mr. H. E. Bradish, West Boylston.

The By-Laws provide for a Board of Directors consisting of the following:

Provision is made for the Secretary of the State Board of Agriculture to act as Chairman, with the State Inspector of Apiaries; the President, Vice President and Secretary as the other members.

Members—The Secretary of the State Board of Agriculture and the State Inspector of Apiaries shall be ex-officio members.

Voting members shall consist of three delegates from each of the regularly organized beekeepers' societies of the State. Their dues shall be $2 annually.

As an associate member, any person who keeps at least one colony of bees is eligible, but associate members have no vote. Their dues shall be 50 cents annually, with an application fee of fifty cents.

After a thorough business session the meeting adjourned, subject to the call of the directors.

BURTON N. GATES,
Acting Sec.

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**County Inspectors Alive in Texas**—One of the most interesting and instructive meetings held recently in Texas was the conference of County Apiary Inspectors at College Station, February 11 and 12. More than 25 county Inspectors were present and many valuable papers were read. Among them was a scientific and scholarly treatise on foulbrood by Dr. N. G. LeGear, of Waco. With a high power microscope and a number of slides he exhibited the bacillus of American foulbrood in all its forms and traced its life history.

Monday, Feb. 11, 1918—Forenoon Session—

9:00—The Inspection Service, F. B. Paddock, State Entomologist.

9:30—The College, Dr. W. B. Bizzell, President Texas A. & M. College.

10:00—The Experiment Station, B. Youngblood, Director Experiment Station.

10:30—The Extension Service, T. O. Walton, Assistant Director of Extension service.

11:00—Apicultural Instruction, Prof. S. W. Bilsing, Professor of Entomology Texas A. & M. College.

11:30—Foulbrood Eradication, W. E. Jackson, Assistant Entomologist.

Afternoon Session—

1:30 to 5:30—Fifteen-minute report from each Inspector present of the local work.

Tuesday, Feb. 12, 1918—Forenoon Session—

9:00—Letters of Authorization and Vouchers, F. B. Paddock.

9:30—Reports, W. E. Jackson.

10:00—Laws and Regulations, F. B. Paddock.

10:30—Proposed Work, W. E. Jackson.

11:00—Instruction Book, F. B. Paddock.

Afternoon Session—

1:00—Inspection of College and Experiment Station.

2:30—Foulbrood, N. G. LeGear.

3:00—Sacbrood, T. W. Burleson.

3:30—Inspectors as Advisors, J. B. King.

4:00—County Educational Work, T. A. Bowden.

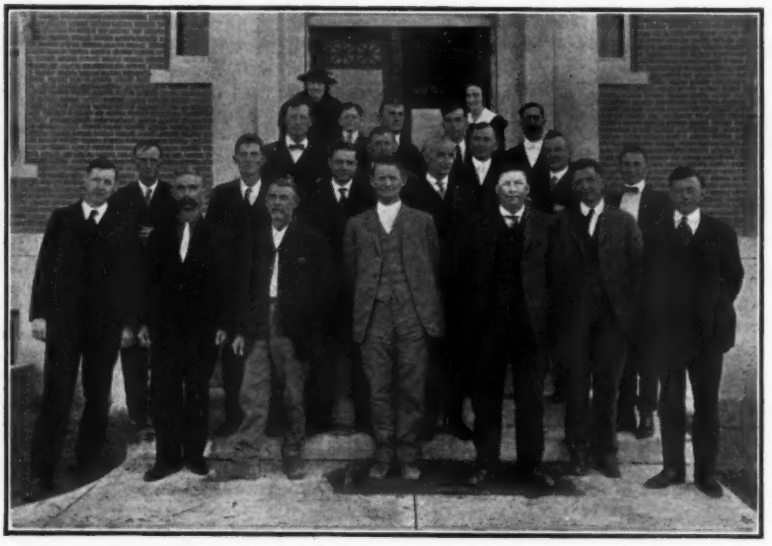
Evening Session—

Smoker.

It is to the energy of Mr. F. B. Paddock, State Entomologist, that the success of the meeting is largely due. He has prepared to wage an effective battle of eradication this season against our common enemy.

This meeting was held to educate the inspectors as to their duties and powers and to more fully co-relate their work. Strict regulations are to be enforced covering the shipment of honey out of infected areas. Certificates of inspection, showing freedom from disease must accompany bills of lading covering the tender of honey to railway agents for shipment. Texas is fortunate in having a foulbrood law "with teeth in it," and great progress is looked forward to this season. Active work is being done in 28 counties.

E. G. LeSTOURGEON.



Inspectors in attendance at the Texas Conference

# DR. MILLER'S ANSWERS

**Send Questions either to the office of the American Bee Journal or direct to DR. C. C. MILLER, MARENGO, ILL.**
**He does NOT answer bee-keeping questions by mail.**

### Queens

1. What is a laying queen?

2. Can I use a virgin queen in a hive with success and will the bees swarm, and also work good the first summer by using a virgin queen?

3. What is an untested queen, and how do you know when you buy a queen whether it is a virgin, tested or untested?

4. Would I have as good a chance to introduce a virgin or an untested queen to a colony of bees as to pay $2 for a tested queen?

5. Will a virgin queen lay?

SOUTH DAKOTA.

ANSWERS.—1. As soon as a queen begins to lay eggs she is called a laying queen for the rest of her life, even though she may stop laying for weeks or months.

2. You would make a failure with a virgin, if she should remain a virgin. But after mating she might do excellent work, and would be very unlikely to swarm in her first summer.

3. An untested queen is a laying queen that has been laying so short a time that none of her progeny has yet emerged, and she becomes a tested queen after the markings of her progeny show that she has purely mated. After sufficient experience you can tell with more or less certainty by her looks whether a queen is a virgin or a laying queen; but I wouldn't undertake to tell a beginner how to do it. No one can tell by the looks of a laying queen whether she is tested or untested.

4. A virgin is harder to introduce than a laying queen; but an untested queen is introduced as easily as a tested one.

5. A virgin that fails to mate generally disappears; but sometimes she lays, producing nothing but drones.

### Buying Bees

This winter I have lost a colony of three-band Italian bees. These bees were killed through starvation. The bees were thick on the combs and some of them were inside the combs. I want to know if I could buy a colony or a couple of pounds of bees and a queen. Could I use these combs for foundation? ILLINOIS.

ANSWER.—You can use those combs with decided advantage over using foundation. You would hardly buy a colony to put on the combs, for in the ordinary acceptation of the term, when you buy a colony you buy the combs with it. But if you should buy a colony with its combs, you could use the combs to good advantage in making increase. It would be good policy to buy a 2-pound package of bees with a queen, putting them on your combs. Brush the combs as clean as you can, and put at one side those that are the dirtiest, or that have dead bees in them. If you dry the combs well you may be able to shake out some of the dead bees by holding the comb flat and shaking hard.

### Wax Moths in Section Honey

I am bothered with the wax moths hatching out and damaging my section honey after it is cased up ready for the market. What can I do to avoid this trouble? I am satisfied the moth has already deposited the eggs while on the hive. ARKANSAS.

ANSWER.—You are right that the eggs are already on the sections when taken from the hive. You can fumigate the sections with sulphur a week or two after taking from the hive, and then again two weeks later, and carbon disulfide is still better. The moths are worse with blacks than with Italians.

### Chaff Covering

Would a chaff tray of six inches depth be either beneficial or detrimental left on hive all summer, run either for extracted or comb-honey production? NEW YORK

ANSWER.—It might do some good on cool nights; also on hot days, if hives are exposed to the sun.

### Hives in Open

Is the best place for hives in the open, or in a protecting shed with open window, giving free access to outer air? NEW YORK.

ANSWER.—A protecting shed may be a good thing in winter, but when you come to work with the bees in summer you will find it a good deal handier not to be hampered with a shed. The ideal thing is to have hives sitting under the shade of trees.

### Requeening With Ripe Queen-Cell

1. Is it practical to requeen without dequeening by placing a ripe queen cell in the brood chamber in such a way that it will not be torn down?

2. Would the queen be apt to tear it down if it were placed between the frames, say at the back end of the hive?

3. Does a virgin queen usually overcome a laying queen?

4. Do you think this is a good way to requeen with the least amount of work?

5. Is the L frame and the Hoffman frame the same thing and size? ILLINOIS.

ANSWERS.—1. Sometimes it would succeed; oftener it would not.

2. It would generally be torn down, either by the queen or the workers, or both.

3. That depends. If the virgin has been reared by the bees themselves, she will be victor; although quite often the old queen and the young one will for a time live peaceably together. But if you attempt to get a virgin into a hive with a laying queen, the virgin is practically certain to be killed, unless the laying queen be so old or poor that the bees are anxious to supersede her.

4. It's hardly a good plan, for if the cell is not torn down its presence will likely make the bees swarm, which you are not likely to want.

5 The Hoffman frame is a Langstroth frame with shoulders that make it self-spacing.

### Mold in Hives

1. What causes the mold on the bottom-board and lower parts of the frames? They were packed on all sides with straw and leaves to a thickness of about six inches.

2. What damage will it do to the bees or comb?

3. How can it be remedied? KANSAS.

ANSWERS.—1. It is likely a combination of dampness and lack of ventilation.

2. That depends on the extent of the trouble. If severe, it may cause diarrhoea. The bees can clean up the combs, even if very bad.

3. Have colonies strong, and give sufficient upward ventilation.

### Sulphur for Foulbrood

By putting supers and empty combs in a light room and burning sulphur, will this kill foulbrood? NEW YORK.

ANSWER.—No, not the least little bit.

### Foulbrood

1. Is the sunken surface of brood-cells always a sure sign that either American or European foulbrood is present, or do you sometimes find the surface of cells sunken when no foulbrood is present?

2. In what way does European foulbrood differ from pickled-brood? How can I tell the difference?

3. Do the bees build the comb in sections heavier in cold weather than when it is warmer? MINNESOTA.

ANSWERS.—1. I think there may be sometimes sunken cells without foulbrood, as also foulbrood without sunken cells.

2. In European foulbrood the diseased larvae have a decidedly yellowish tinge.

3. I don't know; but I hardly think so.

### Miscellaneous

1. I made some Doolittle queen-cell cups, and while dipping I fastened to it a pin in a horizontal position so I can easily transfer them on any comb. What do you think of this idea?

2. If I put those cells on the combs in the brood-chamber before swarming will the queen lay eggs in them?

3. What kind of hives do you use?

4. What kind of a double-walled hive do you think is best for ordinary use?

5. Do you know where I can get the old style beveled edge hives?

6. Does any water run in a straight edged hive when it rains? If so how does it do any harm?

7. What is the best way to clip a queen for one that is too nervous and excited to hold them in the fingers?

8. Does it do the bees any harm to handle them often?

9. When is the best time to move bees a short distance of about 50 feet? ILLINOIS.

ANSWERS.—1. It may work all right

2. I don't know; I think she might sometimes, but generally not.

3. Eight-frame dovetailed. Ten-frame would probably be better.

4 Probably there isn't much difference; and for ordinary use I should not want double walls.

5. No; their inventor has discarded them, and you would hardly like them if you had them.

6. A very little may go through, but I never could see that it did any harm.

7. I don't know whether it is longer in use; but at one time there was advertised a device, a sort of tube in which you put a queen, and through openings she would thrust a wing so you could clip it.

8 It may not do any great harm; but at least it hinders them in their work, so that they should not be handled without some good reason.

9. A good time is early in spring when they have hardly begun to fly yet.

### Bees Flying When There is Snow

1. Should bees be confined to the hive on warm winter days when there is snow on the ground?

2. Would the same number of bees be lost if there wasn't any snow on the ground? CONNECTICUT.

ANSWERS.—1. Something depends on circumstances. If they had a flight only a week or so before a bright day comes with snow on the ground, then it is well to shade the entrances so they will not fly out and fall into the snow. If they have not had a flight for a considerable time, then let them fly, but throw hay, straw, or something on the ground near the hives so they will not sink in the soft snow never to rise again It will help if you do nothing more than to tramp down the snow to make it hard.

2. No, there are bees that drop into the snow and perish that would not die if they did not leave the hive.

### Wintering

Is it necessary to put bees in the cellar or use winter packing cases in this locality?

Could bees be wintered or stored in a shed as well as in the cellar? WISCONSIN.

ANSWER.—In Wisconsin it is quite necessary to winter bees in cellar, or else pack them if left outdoors They may be wintered in an old-fashioned shed, with packing about them; but the majority prefer to have them in a good cellar.

### Mailing Queens a Distance

Would queens travel safely to Ireland from the States? IRELAND.

ANSWER.—There is so much delay and uncertainty nowadays that you would run some risk in having queens shipped at present.

### Cellar Wintering

I built two new bee-cellars last fall. They seem to be quite damp, some mold on combs and drops of water on cover; temperature from 44 to 46 degrees. Do you think I ought to warm them up some way? I was in one cellar today; they seem to be quiet. I put away 300 colonies and am quite anxious about them. This is a hard winter up here; 38 below zero this morning, Feb. 1. MICHIGAN.

ANSWER.—The condition of your cellars would indicate that they do not have enough ventilation. It might be a good plan to warm up the cellar a little, provided the temperature is not raised high enough to excite the bees. I believe that if you can open the doors or windows when the temperature outside is neither too high nor too low, it may help considerably. Mould on the combs is very disagreeable, but not necessarily injurious to the bees. But it would be much better if the air was dry. If the weather is cold, try using a coal oil stove, giving enough ventilation to keep the excess of heat from disturbing the bees. When they are quiet, it is a good sign.

I will gladly answer any other question, if in my power. We want to help our subscribers as much as we can.—Editor.

### Increasing

In Pellett's Productive Beekeeping, pages111-112, a method of making rapid increase by you (Miller) is described. As I understand it you used nine colonies, but made the increase directly each nine days from "Hive No. 2." Ac-

cording to this you would have the following number of hives each period: June 12, 10; June 19, 12; June 26, 14, etc. In other words, an increase of only two each nine days. Now, I have to depend mostly on white clover, and often have no fall flow. White clover is not productive with us, as a rule, after August 1. So I am unable to see where I could by that method even get half the 56 colonies mentioned. Will you please explain? I will look for the answer in the American Bee Journal.
WEST VIRGINIA.

ANSWER.—You will find the story of this increase more fully told in "Fifty Years Among the Bees." There is nothing remarkable about it, seeing the season was excellent, except that it was done with nine very weak colonies. "May 29 there were only 41 combs containing any brood in the nine colonies, counting each comb with brood, even if the patch of brood were no larger than a silver dollar. I doubt if the nine averaged any more than three and a half good frames of brood each."

You are in error in assumin that there was "an increase of only two each nine days." Here are the figures of the actual increase made on each date:

June 12, 1; June 21, 2; June 30, 5; July 8, 4; July 18, 2; July 27, 7; August 4, 8; August 14, 14; August 23, 4.

That was making increase later than you think practicable in your locality, but if the nine colonies had been fairly strong the number probably could have been reached by August 1, and the total number made considerably larger by August 23.

### Italianizing an Apiary

I have about 40 colonies of bees; they are all strong and in good shape. Last year I bought two golden Italian queens and am very much pleased with the results obtained from them. Now, I have heard it said, and I have read, that if a man has an Italian queen or two that in a couple of years or so he can Italianize his whole apiary. I would like very much to know how you do it. How would it do to go to the hive you want to Italianize, destroy the queen, then go to the hive containing the Italian queen and take a frame of brood containing one or more queen-cells and put it in the hive you want to Italianize? By so doing would they raise a young Italian queen? Or, how would it do, by destroying the queen and queen-cells as before stated, to cut out a queen-cell from the Italian hive and insert it carefully in the center of a frame in the hive to be Italianized? Would the bees take care of it and would it hatch out and become a queen for the hive? Will either of these plans work? MICHIGAN.

ANSWER.—Either of the ways you mention should be entirely successful. But don't be too hopeful about having all your colonies pure Italian all at once. So long as other colonies with the wrong kind of bees are within a mile or so, you may expect more or less of your young queens to meet drones from them, and it may take years to be entirely free from black blood.

### Poisoned with Propolis

I get poisoned with propolis. My eyes swell shut. I have fever, and in a few days I feel like I had been sunburned. My skin peels off a dozen times or more from one poisoning. I even get poisoned from dust from scraping honey boxes. I sometimes get so sick it affects my heart. Can you tell me of a remedy?
MISSOURI.

ANSWER.—I think it is more or less a common thing that beekeepers are troubled with the dust of propolis when scraping sections, although a good many of them may not know it. Their eyes smart and their nose troubles them, but they think it is only a bad cold. There are, however, a few to whom it is a real affliction, as it is in your case. I am very sorry to say I know of no remedy, but am glad to put the matter before beekeepers thus publicly, and if any one knows of a remedy, or even a palliative, he will be doing a public benefit if he will tell us about it.

### Bees in Pound Packages

1. Which would you advise, buying bees in one-pound or two-pound packages?

2. At about what date should they arrive in this locality (northeast Missouri)?

3. I have some frames of honey about 5 pounds each. If I order two-pound package of bees delivered about May 1, how many frames would it take to keep them till white clover blooms?

4. Would it be unlawful for me to build hives for my own use the same style as the Dadant hive, but with the same size body as the Tri-State hive? MISSOURI.

ANSWERS.—1. In most cases the result will be more satisfactory with the larger package.

2. You will probably do well if you get them by the middle of May.

3. Two will likely be plenty.

4. No.

### Foulbrood—Preventing Burr-Combs

1. At the Pennsylvania State Convention, the method of shaking on full sheets with a drawn comb in the center, as a foulbrood treatment, was strongly advanced. The purpose of the comb is to catch the diseased honey; it is removed after 3 days. Do you consider this treatment effective?

2. I have never heard of anyone recommending the shellacking of brood-frames for the prevention of burr-combs and excessive propolis. All my Hoffman frames have the top and sides of the upper bars, as well as the narrow sides of the end bars, filled with a coat of shellac or wood filler, and a second coat of good varnish, after being sandpapered. Is it considered too much work for the results obtainable? PENNSYLVANIA.

ANSWERS.—1. I should expect good results from the plan, hardly so much because the drawn comb would catch the honey as because it would tend to keep the bees from absconding, which they too often do when nothing but foundation is present.

2. I should not consider the work too much if it would secure permanently the result desired. I should be a little afraid the treatment would lose its effect after two or three years, but possibly not.

### Rim on Inner Hive Cover

Why the ⅜-in. rim on inner hive-covers? It does not keep them from warping; in fact the Root people put out some with channel irons and no rim. The air space formed by this shallow rim is not enough to do much good, as a heat preventer, and some makers are now leaving off the side strips, so as to get a draft through under the cover. If, as I read, this cover is to be turned over in packing for winter, so as to form a clustering space above the frames, would not a half-inch, three-fourths-inch or even an inch rim be more desirable? Would it not be a good idea to have at least as much space above the frames, with, of course, an abundance of jacking above the brood-chamber IOWA.

ANSWER.—I haven't bought any hives for some time, so I'm not sure just what you're talking about, but I suspect the idea is to have a ⅜ in. space over the top-bars, not to allow a place to cluster, but merely to allow the bees to pass readily from one comb to another.

I don't know, but I'm skeptical about an inch space being better. Indeed, I'm a little skeptical about bees clustering above top-bars, and I don't believe they care for any space above their combs. I know they often cluster below their combs, but I think more than room enough above top-bars to allow free passage from one side to the other would be merely giving so much empty space for the bees to keep warm. However, if you say you *know* they like to cluster above, I'm ready to change my opinion.

### Nucleus—Division-Board—Demaree Plan

1. In starting a colony from a nucleus by putting frames, bees and queen into a new hive and moving to a new stand do you always imprison them for a few days to prevent them from returning to their former stand?

2. After the entrance to a nucleus hive has been stuffed with leaves to prevent the bees from returning to their former stand, why do you stir up the bees by pounding on the hive just before liberating them?

3. When adding frames of brood with adhering bees to these nuclei, do not many of the bees return to the parent hive?

4. Will bees ever carry eggs or young larvæ from one frame to another to put into a queen-cell, or do they always build the queen-cell around the larva right where the egg was deposited by the queen? It seems to me that I have read somewhere of a larva being carried above an excluder.

5. Last year, for lack of frames, I had a 10-frame hive with five frames of bees and foundation on one side of the hive, the other side being entirely empty. Although the foundation in these frames was not yet all drawn out, the bees began building comb in the empty space. Now, as I have never owned or used such a thing, I would like to ask if a division-board placed beside the frames would have prevented this?

6. In this vicinity we depend almost entirely upon white and alsike clover for surplus. Soft maple and dandelion are abundant for building up colonies in early spring, but the small amount of buckwheat and late bloom are usually of minor value for surplus.

Now, I expect to try the Demaree plan next year and I would like to get your advice as to my best way to make increase. I desire to make but slight increase (about 25 per cent), and as there will probably be abundance of bee and little for them to do in the latter part of the season, I wish to inquire if it will be best for me—

1st. To divide those large Demaree colonies at the end of the clover harvest, depending on the new colonies to gather their own stores, or,

2nd, Let each large colony work as a unit until about September 15 and then divide, also dividing stores with the new colonies and in either case giving a laying queen to the new colony, or,

3rd. Will it be better to select colonies in May from which to make increase by the nucleus plan, not expecting these colonies to store any surplus? MICHIGAN.

ANSWERS.—1. That depends. If the bees have been queenless for a few days, and a goodly number is taken, more than enough to cover the combs, then it is not necessary to imprison. Indeed, if the bees are not queenless, but are taken with their own queen, and enough bees taken to allow for the return of part, then imprisonment is not necessary.

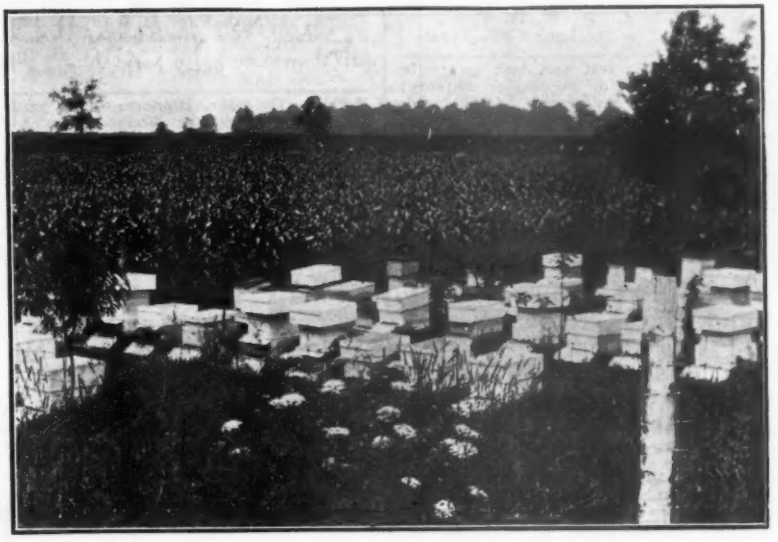
2. I don't, as a rule. If the entrance has leaves crammed into it tightly, it should be two or three days before the first bees will squeeze through, and nothing more will be needed to make them stay; but at any time when it is uncertain whether bees will stay, it will do at least a little toward making them mark their location to pound on the hive before freeing them.

3. Likely, unless the bees added are queenless. It is always possible, however, to have the bees queenless.

4. Generally an egg or larva will be used without moving, and for a long time I could not believe that bees would carry eggs or larvæ from one cell to another; but I have had cases of queen-cells over an excluder where I could find no explanation but to say the bees had carried up through the excluder the material from which to rear queens.

5. You had just what you should have expected. Bees cluster in something like a sphere, and as part of the sphere fell outside the frames of foundation they would build comb there rather than on the foundation outside the sphere. Very likely the dummy would have confined them to the foundation, and yet if the force of bees was sufficient they might have clustered and built outside the dummy.

6. I'm inclined to think I would prefer your third plan, using a few colonies for the increase.



THIS APIARY OF 62 COLONIES BELONGS TO PROF. J. H. DIEBEL, HIGH SCHOOL PRINCIPAL AT COLUMBUS, OHIO. THE BEES ARE AT HICKSVILLE, OHIO, 150 MILES FROM COLUMBUS.

### Catching Swarms

Enclosed I send you a picture of my bee-yard. There are 62 colonies—the view is through the center. I started with 32 in the spring and I intended to keep them from swarming to a considerable extent. I didn't exactly set any definite limit on the number of new swarms I intended to have. They were nearly all large swarms by the first of June. The season being late, no new swarms appeared until July 1. Just when I was sure that I had the swarming impulse well in hand (with plenty of supers, etc.) the fun began. Before it was over every colony in the yard had swarmed. I am well located and in spite of this and the unfavorable season, I got 1,500 sections of fine honey. I have much dandelion, 100 acres of raspberry within easy reach, alsike clover, white clover and basswood. The grove that you see in the background of the picture is nearly all basswood. White sweet clover is becoming abundant.

This is all very fine, but what worries me is that this pesky swarming is going to cover the whole plantation with bee hives. I am revolving in my head all sorts of fancy notions as to how I am going to steal a march on those bees next summer. I have a notion to try out a decoy to catch swarms. Would a device shaped like a cone, covered with wire cloth and hung in a tree attract a swarm? The device could be so arranged that it could be handled like a Manum catcher.

I have noticed that a dark spot formed by a cluster of leaves or branches will attract a swarm. Obviously the flying bees take it for a forming cluster. Two or three of these decoys could be placed in different parts of the yard. They could be suspended in such a manner as to make the manipulation very easy. Has this idea been tried? I am sure you will laugh at this foolish notion. But I want to assure you that this notion is not a bit more foolish than a goodly number of other notions I have originated. I must not forget to say that I spent a very pleasant vacation with these insects and I am already waiting for the time to come when I will return to them. You understand, I think, that these bees are at Hicksville, 150 miles from Columbus.

OHIO.

ANSWER.—If I understand correctly, what you are after is something that will offer an inducement to a swarm to settle where it may be easily secured. Yes, something of that kind has been tried, and with considerable success. Years ago a good deal was said about such things. By some a bunch of dried mullein tops was suspended on the top of a pole set in a convenient place. Others used strings of dead bees. Your cone-shaped device hung in a tree might work all right, and I suspect it might work better away from any tree, in full view. A piece of old black comb in it might be an improvement. A swarm is more likely to settle where some previous swarm has settled. At one time my assistant had a craze for keeping empty hives in or near the apiary, as decoys, each hive containing one or more old combs. Occasionally she caught a swarm, generally a wanderer from away.

Thanks for the fine picture.

### Comb Foundation—Diarrhoea

1. I enclose a sample of comb-foundation which I bought last summer and did not use, as it doesn't look yellow in color like the rest I've used. I don't think the bees will work on it. What do you say?

2. One of my colonies was left weak last fall. I fed them sealed white clover honey. Upon examining them later I found everything dark brown all over the frames and combs. The bees are all alive. What disease is this? How is it cured?

MINNESOTA.

ANSWERS.—1. I should call it a sample of excellent foundation. The color of foundation varies according to the wax from which it is made. It may be lighter than your sample and it may be very much darker, and the bees will probably like this as well as the brighter yellow.

2. The trouble is probably diarrhoea, and the cure is to allow the bees a flight as soon as practicable.

### Transferring from a Tree

I found a swarm of bees this winter located in a large dead tree stub in the woods. They are in the lower part of the tree; do you think it possible for me to transfer this swarm to a hive? What method would you advise, and at what time of the year would you think it best to do it? NEW YORK.

ANSWER.—A good time to operate is when fruit blossoms open. Cut down the tree; cut it off above and below where the bees are, and split open the trunk, then you can cut out the combs of brood and tie them into the frames, upon which the bees can settle after you have put them in the hive, when you can take the bees home. Better not take them home till all bees are in the hives in the evening.

### Increase

I am an amateur in the bee business and want to increase. Which method do you recommend, natural swarming or dividing?

CALIFORNIA.

ANSWER.—One who is well up in the business will do better to take the matter of increase into his own hands. One with very little experience may do well to let the bees take their own course. Not entirely, however; for it is seldom desirable to allow each colony to swarm more than once, and it is a rather simple matter for the most inexperienced to prevent all after-swarming. When a swarm is hived, put the swarm on the old stand and set the old hive close up to it, facing the same way. A week later move the old hive to a new place 10 feet or more away. That's all. There is little chance that there will be any second swarm.

### Diseased Combs—Shallow Frames Versus Full Depth

1. Would it be safe to use combs on which bees have died of foulbrood for extracted honey above a queen excluder?

2. Which do you prefer for extracted honey, shallow or full depth frames?

VIRGINIA.

ANSWERS.—1. So far as the honey is concerned, it would be all right. But if combs affected with American foulbrood were used there would be danger to the bees in the brood-chamber below. With European foulbrood there would not be much danger. Yet if your apiary is entirely free from both kinds of foulbrood I should advise you to take no chances whatever.

2. Best results are probably obtained with the shallow combs, although many prefer to use the deeper combs on account of the convenience of using the same kind in any story.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### Queenless in March

What is the best thing to do when one finds early in March that a colony of his bees is queenless? It is too early at this time of the year to purchase queens, and if a queen is reared from young brood there would be no drones with which to mate her. Is there any remedy, or should the colony be united to one having a queen?

ALABAMA.

ANSWER.—The best thing is to unite the bees with another colony, or with other colonies. If you have a very weak colony with a good queen, unite with that. Otherwise unite with two or more of the weaker colonies.

### Bees Cleaning Combs

If I place hives filled with combs from colonies that have died, under strong colonies, so that the bees will clean them out, will it do to leave them there until needed to hive a swarm or for some other purpose? Will the queen go down and lay in them after they are cleaned? A SUBSCRIBER.

ANSWER.—Yes, it will be all right to leave the combs under the colony until time for surplus supers to be given. The queen will not go down to lay in them unless she really needs the room, in which case you can do nothing better than to let her lay in them.

### Natural or Shaken Swarm

Will the plan given on page 280 of the American Bee Journal, fo August, 1916, answer equally well for either natural or shaken swarms? I want to do away with the necessity of having on hand a lot of extra hives and frames that would be necessary were I to follow the plan of placing the old hive alongside of the new one for about 3 weeks, and shaking the young bees off the frames occasionally as they emerge.

PENNSYLVANIA.

ANSWER.—Yes, it will be all right to shake the bees off all but one comb, taking away that one comb a week later, giving the brood taken away to weaker colonies. But I hardly see how that will make any fewer frames necessary, although it will take less hives.

# Classified Department

**Advertisements in this department will be inserted at 15 cents per line, with no discounts of any kind. Notices here cannot be less than two lines. If wanted in this department, you must say so when ordering.**

## BEES AND QUEENS

NORTHERN BRED ITALIAN QUEENS—Ready May 1, each, $1; six, $5.
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GOLDENS that are true to name. Untested queens, $1; 6, $5; 12, $9; 50, $35; 100, $67.50. Garden City Apiaries,
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FOR SALE—At the yard, 100 hives of bees; your pick $6; the run $5. Empty hives, etc., less than cost. D. E. Lohmmedieu,
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THREE-BANDED ITALIANS ONLY—Untested queens, each $1; 6, $5; 12, $9; 50, $35; 100, $67.50. H. G. Dunn,
The Willows, San Jose, Calif.

WARRANTED QUEENS from one of Dr. Miller's breeders, $1 each; $10 per doz. Package bees, without queen, $3 for 2-lb. package; $1.75 for 1-lb package; 25 packages or more, 10c less; add price of queen. Full colonies in 10-frame hives, $10 each, in 8-frame hives, $9, in Danzenbaker hives $8. Tested queens in all colonies.
Geo. A. Hummer & Sons, Prairie Point, Miss.

QUEENS BY RETURN MAIL—Choice tested queens, reared last fall and wintered in 4-frame nuclei, $1.25; $14 per doz. Queens of this season's rearing, untested, $1; $9 per doz. We breed the 3-band Italians only and our strain is known for gentleness and honey gathering qualities. Every queen guaranteed. Never a case of foulbrood in our apiaries.
J. W. K. Shaw & Co., Loreauville, La.

A NICE 1-pound package Italian bees with queen, $2.25; 2-pound package with queen, $3.25, shipped c. o. d. W. H. Moses,
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FOR SALE—The largest and best apiary in Western Colorado, for September delivery; also small dairy and fruit ranch. Good building. Cause for selling, asthma; have moved twice in last 20 years. J. G. Puett,
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OUR select bred mated queens winter well.
Honeymoon Apiaries, Yakima, Wash.

FOR SALE—First-class Italian queens and bees in season. Send for price list. Free from disease; safe arrival and satisfaction guaranteed. M. Bates, Greenville, Ala., R. 4.

BREEDING QUEENS—I have a few extra choice Italian breeders for spring delivery. Price $5 each.
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OUR BRIGHT ITALIAN QUEENS will be ready to ship after April 15. Untested, 75c each, $8 per doz., or $65 per 100. Safe arrival guaranteed.
Tillery Bros., Georgiana, Ala., Route 5.

FOR SALE—Fine Italian queens at 90c each, $9 per doz. Ready April 15. Safe arrival guaranteed.
T. J. Talley, Route 3, Greenville, Ala.

BEES AND QUEENS from my New Jersey apiary. J. H. M. Cook,
1Atf 84 Cortland St., New York City.

TESTED leather-colored queens, $2.00; after June 1, $1.50; untested, $1.00; $10 per doz.
A. W. Yates, 3 Chapman St., Hartford, Conn.

GOLDEN Italian Queens, untested queens, $1 each; six, $4.25; $8.25 per doz., 50, $32.50; $60 per 100. Tested queen, $1.50; one frame nucleus, no queen, $1.25; 2-frame, $2.25; 8-frame, $3; breeders, $5 and $10.
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Mrs. T. H. Carruth, Big Bend, La.

FOR SALE—Golden Italian bees; 1-lb. pkg., with queen, $2.50; 2-lb. pkg., with queen, $4; 2-frame nuclei, with queen, $3.50.
L. J. Bond, Big Bend, La.

GOLDEN ITALIAN QUEENS—No better honey gatherers anywhere at any price. Untested, $1; tested, $2.
Wallace R. Beaver, Lincoln, Ill.

GOLDEN ITALIAN QUEENS—About May 1; good honey gatherers; no foulbrood; select tested, $1.50; tested, $1.25; untested 85c, 6 $4.75, 12 $9. No nuclei or bees for sale.
D. T. Gaster, Rt. 2, Randleman, N. C.

THE Sinking Creek Queen Introducing Cage; 5 years' test of absolute success; indispensable for introduction of valuable queens; also several queens can be kept in one hive in perfect harmony; small and works on the brood comb; especially adapted for queen breeders. Price 60c per doz., 2 doz. for $1; post paid. Sinking Creek Apiaries, Gimlet, Ky.

SWARTS GOLDEN QUEENS produce golden bees of the highest qualities; satisfaction guaranteed. Mated $1. 6 for $5; tested $2.
D. L. Swartz, Lancaster, O., Rt. 2.

FINEST ITALIAN QUEENS, June 1 to November, $1 each; 6 for $5. My circular gives safe methods; free. J. W. Romberger,
3113 Locust St., St. Joseph, Mo.

ABOUT APRIL 15 I will again be ready to fill orders for untested queens of my fine strain of leather-colored Italians. I breed no other race. Choice tested and breeding queens at all times. Satisfaction guaranteed. Circular free. Untested queens $1 each, $9 doz.; choice tested $1.50 each; fine breeders $5 each.
C. S. Engle, Beeville, Bee Co., Texas.

QUEENS—H. D. Murry's strain of 3-banded Italians; reared by the Doolittle method. Prices untested, 1 for $1, 6 for $5, 12 for $9. No disease. Safe arrival and satisfaction guaranteed. O. D. Rivers,
Route 4, Honey Grove, Texas.

HAVE YOU, Mr. Producer, been getting all for your honey that you could expect? If the price you have been getting has been less than the largest price you have read about, let the Domestic Beekeeper, Northstar, Mich., help you dispose of your 1918 crop. Investigate.

FOR SALE—One to fifty colonies of Italian bees in ten-frame hives. Bees and hives are in A 1 shape; no disease. Price $10 per colony. John C. Bull,
1013 Calumet Ave., Valparaiso, Ind.

GOLDEN QUEENS that produce Golden workers of the brightest kind. I will challenge the world on my Goldens and their honey-getting qualities. Price, $1 each; tested, $2; breeders, $5 and $10.
2Atf J. B. Brockwell, Barnetts, Va.


**Get More Honey from Each Colony**

¶ Don't be satisfied with your usual crop. Get a bigger one this year.

¶ There is often enuf honey lost in an apiary, thru lack of enuf supplies at the right time, to pay the entire expense of running that apiary for a whole year.

¶ Don't lose honey that way. Get your supplies now, before it is too late — and be sure to order

**MADE RIGHT BEE SUPPLIES**

*Quality ... Service*

**Kretchmer Mfg. Co.**

**COUNCIL BLUFFS IOWA**

IF YOU HAVEN'T ONE OF OUR GREEN CATALOGS, WRITE FOR ONE

FOR SALE—8-frame colonies, extra fine strain Italian bees, with queens, $7 each; all free from disease, with stores for winter; standard full depth self-spacing Hoffman frames, all straight combs in new one-story single-wall hives f. o. b. here. Wilmer Clarke,
Earlville, Mad. Co., N. Y.

PURE 3-banded Italian queens, untested but warranted, $1; 6, $5; tested, $1.50; 6, $8. Last year's tested queens, clipped, $1. Good fat nuclei and full colonies in abundance. Write for price list. J. F. Diemer,
Liberty, Mo.

GOLDEN and 3-banded Italian queens will be our specialty. We can also furnish Carniolians. Tested $1, untested 75c each. Bees, per pound, $1.50; nuclei, per frame, $1.50. Send your order for bees early.
C. B. Bankston & Co., Buffalo Leon Co., Tex.

THREE-Banded and Golden Italian Queens and pound packages in spring, from the Sunny Southland. Grant Anderson,
Rio Hondo, Texas.

THREE-BANDED Italians; untested queens in April and May, one, $1; 6, $5; 12, $9. Tested, $1.50 each. One-pound packages of bees, $1.50 each; two-pound packages, $2.50 each. Add price of queens if wanted. If you want as many as 50 packages write for prices and discounts on early orders. Safe arrival and satisfaction guaranteed. No disease, and all queens purely mated.
Cotton Belt Apiaries, Box 83, Roxton, Texas.

FOR SALE—One and two-pound packages bees with Italian queens; April and May.
E. Eggeman, Allenville, Ala.

GRAY CAUCASIANS—Gray Carniolans, 3-banded Italians; gentle, hardy, prolific; cap beautifully white; are "Mendelian" bred to superior drones, from choicest mothers; results are obvious. Apiaries widely separated. Quinn's queens of quality have no superiors. "There's a reason." Chas W. Quinn,
609 W. 17th Ave., Houston Heights, Texas.

SELECT bred, mated queens, $1 each, prepaid. Bred from the selected stock of eleven yards totaling over 1,500 colonies of bees run for commercial honey production. Only one grade of queens—no culls sold, $10 per dozen, prepaid. Honeymoon Apiaries,
402 N. Fifth Ave., Yakima, Wash.

## HONEY AND BEESWAX

CASH paid at your bank for carlots and less, of comb and extracted honey.
Wesley Foster, Boulder, Colo.

FOR SALE—Two barrels amber honey, boneset, smartweed and goldenrod; 104 gallons in lot, and best offer takes it.
J. F. Archdekin, Bordelonville, La.

WANTED—Shipments of old comb and cappings for rendering. We pay the highest cash and trade prices, charging but 5c a pound for wax rendered. The Fred W. Muth Co.,
204 Walnut St., Cincinnati, Ohio.

WANTED—White or light amber extracted honey in any quantity. Kindly send sample, tell how your honey is packed and your lowest cash price; also buy beeswax.
E. B. Rosa. Monroe, Wis.

WANTED—Comb, extracted honey, and beeswax R. A. Burnett & Co.,
6A12t 173 S. Water St., Chicago. Ill

WANTED—Beeswax at all times in any quantity, for cash or in exchange for supplies.
Dadant & Sons, Hamilton, Ill.

## SUPPLIES

FOR SALE—200 wire queen excluders, 45c each. D. G. Little, Hartley, Iowa.

CLOSING OUT—Entire stock of bee supplies; send bill of goods needed for my prices; no catalogue. A few No. 2 4x5 sections, $4 per 1,000. H. S. Duby, St. Anne, Ill.

FOR SALE—Dadant foundation, light brood, but oversize, 16⅝x8¼ in., to better fit L. or H. frames. Why buy worker foundation that leaves ⅜-in. at bottom for drone comb, or that is not fastened? Discount for cash, or can use honey E. H. Bruner,
3836 No. Kostner Ave., Chicago.

A BARGAIN—200 used T-supers for 10-frame hives, for 4¼ in, 2-beeway sections, with tins, at 25c; also 10,000 sections for same, or separately, at a discount. Cash, or will exchange for honey E. H. Bruner,
3836 No. Kostner Ave., Chicago.

QUICK CASH on arrival for your honey, if such as I can use. Send sample say how much and price. Can furnish containers if wanted. E. H. Bruner,
3836 No. Kostner Ave., Chicago.

FOR SALE—Pure maple syrup, in one-gallon cans, $2.50; six gallons or more at $14.
The M. C. Silsbee Company, Avoca, N. Y.

SWARMING CONTROLLED—No additional fixtures needed; unnecessary to clip queens; done solely by manipulation. Successfully used eight years. For particulars, address
Trimble & Thompson, Wapello, Iowa.

ARE YOU keeping well posted on the crop condition and price prospects for your 1918 crop of honey? If not, you should! The Domestic Beekeeper, Northstar, Mich., will keep you posted on crop condition and price prospects as recommended by the Committee of the Chicago Northwestern Association. This committee, through the Domestic Beekeeper, saved producers a half million dollars on their 1917 crop of honey and expects to do even better on their 1918 crop. Are you one who is not taking advantage of an opportunity never before offered to secure all your crop of honey is worth? This opportunity is worth investigating.

FOR SALE—Second-hand hives; Danzenbaker 8-10-frame hives and frames; 2 empty bodies, 9 bottoms; 11 covers; 10 supers for sec. 4x5x 1 3-8; and fences and sec. holders; sell the lot for $19.50, free on board Utica, Ill., R. I. & P. R. R.. Half price of new; no foulbrood.
A. Mottaz, Utica, Ill.

CONSERVATION PASTE—Costs less than 1c per pint; will stick your label on anything any time; easily and quickly made; no boiling; simple ingredients; ready for use in 30 seconds. Send 25c for formula. Money refunded if not satisfactory.
Sunnyside Apiaries, Fromberg, Mont.

NORTHWESTERN BEEKEEPERS — Save time and freight charges by ordering supplies near home. Best standard goods, factory prices. Send list of wants, and I will quote lowest prices. Catalog upon request.
George E. Webster, Valley View Farm Apiary,
Sioux Falls, S. Dak.

FOR SALE—One thousand beehives with supers; three-fourth dovetailed, balance halved together at corners and nailed both ways. Hoffman frames throughout. We will guarantee them to be sound and free from disease. Will sell all or any part at about half what new hives will cost. Apply to The Hyde Bee Co.,
Floresville, Texas.

*"Griggs Saves You Freight"*

**TOLEDO, O.**

Say, Mr. Bee Man, have you placed that order for supplies yet? If not, remember we not only save you freight, but time and money as well.

**DELAYS ARE DANGEROUS**

But don't delay, as Railway Embargoes are all the rage now, and you may be caught.

**LARGE NEW STOCK ON HAND**

All ready to ship out, direct from ROOT'S, who know how to make good goods.

**HONEY AND BEESWAX**

Always wanted; cash or in trade. Send for FREE CATALOG.

**S. J. GRIGGS & COMPANY**

**Department No. 24** **Toledo, Ohio**

*"Griggs Saves You Freight"*

**BEEKEEPERS**

**KEEP IN TOUCH WITH**

**Leutzinger & Lane**

**236-238 Drumm St.**

**SAN FRANCISCO, CALIF.**

**Buyers of EXTRACTED and COMB HONEY**

**Shippers and Exporters of HONEY**

**[ The WORLD is Our Market ]**

# Attention Eastern Beekeepers

WE HAVE A COMPLETE STOCK OF

## Lewis Beeware and Dadant Foundation

Five and ten-lb. pails, also five-gallon cans and glass jars.

Queens, three-banded and golden Italian, ready for delivery now. Untested, $1 each; six for $5.50; twelve for $10. Tested, $2; six for $10.

Safe delivery guaranteed, dead queens being replaced upon their return.

## THE DEROY TAYLOR CO.
**Newark, New York**

# Queens That Will Please

**Over 20 Years of Careful Selecting and Breeding**

They are bred from **Imported** stock, the very best for honey gathering and gentleness. They are not given to swarming and are highly resistant to diseases. Give me your order, and after you have given my queens a fair trial, if you are not satisfied in every way that they are as good as any you have ever used, just return them and I will send you queens to take their place or return your money with any postage you have paid out on returning the queens.

**Prices April 1 to June 15**

| | 1 | 6 | 12 |
|---|---|---|---|
| Untested | $1.00 | $ 5.00 | $ 9.00 |
| Selected untested | 1.15 | 6.00 | 10.00 |
| Tested | 1.50 | 8.00 | 17.00 |
| Selected tested | 2.00 | 11.00 | 20.00 |

**Guarantee.**—You take no risk in buying my queens, for I guarantee every queen to reach you in first-class condition, to be purely mated, and to give perfect satisfaction.

**L. L. FOREHAND, Ft. Deposit, Ala.**

# BEE SUPPLIES

**ORDER EARLY—DON'T DELAY**

Owing to freight embargoes, you may not get your supplies when needed. We have a good stock of hives, Hoffman Frames and other supplies, and can make prompt shipment.

We also render wax from old comb and cappings. Our charge is only five cents per pound for the wax rendered.

*Give us a trial.*
*Catalog free for the asking.*

## The M. C. Silsbee Company
**AVOCA, NEW YORK**


## WANTED

WANTED—Two-frame extractor.
K. L. Carlock, Baylis, Ill.

WANTED—May, October and November, 1917, numbers of American Bee Journal and January, 1918, that are in good condition; will pay 10c each. Please mail carefully so the wrapper covers the entire journal.
American Bee Journal.

WANTED—A good honey location to start a line of apiaries; will give a suitable reward for the best reliable information.
D. E. Lohmmedieu, Colo, Iowa.

WANTED—A two-frame extractor.
H. Leffel, Lakewood, Wis.

WANTED—White sweet clover seed; send sample; state quantity and your lowest price in first letter.
Dadant & Sons, Hamilton, Ill.

WANTED—Bees; 1 to 100 colonies.
C. O. Smith 5446 Cornell Ave., Chicago.

WANTED—Your old combs, cappings or slumgum to render into beeswax by our high steam pressure wax presses.
Dadant & Sons, Hamilton, Ill.

WANTED—Second-hand honey extractors; tell me what you have and price; also wax presses. W. D. Soper, Jackson, Mich.
Dealer in all kinds of Bee Supplies.

## SITUATIONS

WANTED—A strong, inexperienced young woman wants work in apiary, preferably in northwest or Colorado. Can begin June 13
Mildred P. Sturdevant, Gooding, Idaho.

WANTED—Extracting outfit in the south or southwest in good location; give full particulars in first letter. A. Carder,
Constance, Ky.

WANTED—Two bee men for comb honey for 1918. State age, wages and experience.
B. F. Smith. Jr., Fromberg, Mont.

WANTED—Man to work with bees, season 1918; state age, experience and wages on basis of board furnished by us. Address
The Rocky Mountain Bee Co., Billings, Mont.

WOULD YOU like to receive four or five hundred dollars per hundred more for your 1918 crop of honey than the big buyers will offer you? The Domestic Beekeeper, which will cost you but $1 per year, will show you how. This is no guesswork; we have done this very thing with hundreds of our subscribers on their 1917 crop, and are willing to do the same by others. You will make your greatest 1918 mistake if you do not, every one of you investigate the work the Domestic Beekeeper is doing for its subscribers, along the line of buying and selling for them.

WANTED — Industrious young man, fast worker, as a student helper in our large bee business for 1918 season. Truck used for outyards and hauling. Apiaries located near summer resorts. Will give results of long experience and board and small wages. Give age, weight, experience and wages in first letter.
W. A. Latshaw Co., Clarion, Mich.

## FOR SALE

FOR SALE—200 10-frame new supers complete with beeway sections, at a very low figure. Write. L. W. Mundhenke,
East Dubuque, Ill.

FOR SALE—Full-depth 10-frame bodies filled with full-drawn combs, $2 each. Ideal supers, 5 11-16 inches deep, 10-frame full drawn combs, $1.25 each. The Hyde Bee Company,
Floresville, Tex.

FOR SALE—100 comb honey supers, 8 and 10-frame size, painted; in use one year; take the 4¼x4¼x1⅞ scalloped sections, with sections and drawn comb from full sheets foundation, 50c and 35c apiece, cash. Furnish affidavit that they are sound and free from disease. Chester E. Keister, Clarno, Wis.

FOR SALE—Sixty moving screens for ten-frame hives; new and unused. In lots of ten or more, 20 cents each.
Frank C. Pellett, Atlantic, Iowa.

FOR SALE—Cedar or pine dovetailed hives; also full line of supplies, including Dadant's foundation. Write for catalog.
A. E. Burdick, Sunnyside, Wash.

FOR SALE—Having sold my fruit farm, I offer for sale my entire apiary, consisting of 45 colonies in 8 and 10-frame hives. I examined these colonies this spring and find them free of disease, all in good condition, and each has a laying queen.

Fifty 8 and 10-frame hives; frames are full of comb, built mostly on wired foundation; all straight.

One hundred and seventy-five supers with section-holders; all hives and supers are painted.

One 2-frame Cowan extractor.

The following is new stu~ for the present season's use:

Ten 8-frame hives in flat.

Twenty pounds extra thin foundation.

Ten pounds medium brood foundation.

Thirty-five hundred No. 1 sections, size 4¼x 4¼x1⅞.

Everything in first-class shape. In order to close out will accept $400 here for it. No offer for part of it considered.

A W. Gray, Eldora, Iowa.

FOR SALE—54 stands of bees, all in fine condition. Reason for selling, blindness.

A. Gibson, Coleridge, Nebr.

FOR SALE—Four-frame reversible honey extractors and Superior wax presses. Full description on application. Address,

Geo. Stinebring, Shreve, Ohio.

FOR SALE—6 10-frame beehives and combs; 2 8-frame beehives and combs; with supers, sections and appliances. Apply

Chas. Nye, Mill Valley, Calif.

BEAUTIFUL FARM HOME—Improved, rich soil, well located, good buildings, 100 colonies of bees, up to date, best honey-producing location in State; not crowded; average for past seven years 105 lbs; 5 acres of ginseng golden seal, all ages, in fine shape. One-half artificial shade, one-half natural. Will sell a part or all. A wonderful opportunity; a bargain. Poor health reason for selling.

W. M. Penrod, Ronneby, Minn.

LAST FALL Mr. Smith asked us our advice on when best to sell his crop of 15,000 lbs. of clover extracted honey. We answered him by advising that he hold until May, unless he got a good round price for it before. He could at that time have taken something like 12c per pound for it. He held it. At our Michigan State Convention last December, he again asked what we thought about the future price of honey. He could then get 17c per pound for it. We advised him to hold. He sold ne entire crop the other day on board the cars for 18½c per pound. Mr. Smith's case is only one in hundreds of cases where producers have done well by following the advice of the Domestic Beekeeper. We want every beekeeper who has honey to sell to send in his dollar for the Domestic Beekeeper during 1918. We have the back numbers, so can begin your subscription with the January number, thus making your volume complete. Do it today, and at the end of the year get your dollar back if you think you have not received its worth.

# Crop Report and Market Conditions

For our May number we asked the following questions of our reporters:

1. What per cent of loss has there been?
2. In what condition are the bees?
3. Condition of honey plants and prospects?
4. Any offers by buyers on the 1918 crop?
5. What, in your opinion, should extracted honey be worth when the crop begins to be harvested, based on conditions now? Price of comb?

## PER CENT OF LOSS

The average loss this year has probably been as high as a year ago, mostly owing to the fact that many colonies went into winter with a short amount of stores, which might have been sufficient for an ordinary winter, but not enough for a protracted cold such as we had. Losses for different sections average about as follows: Maine 20 per cent, Vermont 10 per cent, New York 20 to 50 per cent, Kentucky 30 per cent. Balance of the southeast 5 to 12 per cent, Ohio and Indiana 20 to 30 per cent, Michigan, Wisconsin and Minnesota 12 to 20 per cent, Illinois 15 per cent, Iowa 10 to 30 per cent, Kansas and west Central States 10 per cent; Texas from 25 to 40 per cent, New Mexico and Arizona 3 to 8 per cent, Colorado and Idaho 3 to 8 per cent, Wyoming and Montana 15 per cent, Washington and Oregon 2 to 6 per cent, California 8 to 15 per cent.

## CONDITION OF BEES

Bees are probably in a normal condition or above, the country over. Many colonies came out of winter in very poor shape, but have been building up fast, so that they are now in normal condition. Idaho and Washington are very much encouraged, the whole Southwest reports excellent condition of bees. In most other locations reports are that bees are from fair to very strong, with very few reports of bees in poor condtion.

## HONEY PLANT PROSPECTS

There is much difference in plant conditions compared with a year ago. A few spotted localities report a short crop in prospect, but most localities are looking for a much better flow than a year ago if the weather is favorable from now on.

Georgia and the balance of the South report excellent prospects, except that in Louisiana the spring crop has failed. Michigan and the northern States are possibly a little less than normal, while Illinois, Indiana and other central States are possibly a little above normal. In Iowa the clover is spotted, being completely burned out in some localities, prospects being fair in others.

Some prospects in Texas are poor, but most are good, and so much better than a year ago that everyone is encouraged. More rain is needed, however.

Idaho and Washington report extra fine prospects, while the whole of the Rocky Mountain region is up to normal. California is generally good, with poor reports from restricted areas. Some report extra fine prospects. In practically all sections the early reports indicate that there are more chances of a crop than a year ago.

## OFFERS ON HONEY

Most reporters state that there are many inquiries for honey with but few definite offers. A Georgia producer has been offered 15 cents for his extracted honey in large lots; one in Florida has been offered 16 cents. In Texas the offers have ranged from 13 to 18 cents for extracted honey, depending on the grade. Here there have been inquiries from the British and French governments.

In Colorado and New Mexico buyers have offered to contract, but at no definite price.

One party in California has contracted his whole crop in advance at 15 cents per pound. Many offers are being circulated at 10 and 12 cents, depending on the grade, but the well-informed beekeeper is paying no attention to these. There seems to be no definite price fixed by any one buyer, many offering what they think the beekeeper will take. We have reports of at least a dozen offers made at prices ranging as low as 15 cents up to as high as 17½ cents f. o. b. shipping station for white extracted.

## PRICES ASKED

No reporter desired to sell his honey at less than 15 cents for extracted, no matter what the grade, while the lowest desired for comb was $4 per case for No. 1.

In the east and central States beekeepers nearer the market, 20 cents is the average price wanted for white extracted, though very few ventured an idea on prices of comb.

One reporter in Wyoming says he is going to get 20 cents for extracted and 25 cents for comb f. o. b. his station, and one in California is going to hold for 25 cents, owing, he says, to a short crop there.

A bulk of reporters judge that there should be little decline in prices over what buyers were paying for the tail end of the 1917 crop, which would be in the neighborhood of 17, 18 and 19 cents f. o. b. shipping point for white extracted honey.

## CONCLUSIONS

The crop should be larger than a year ago.

On the other hand, the demand should be better.

There is one factor which may enter into a determination of the price and that is the facilities for exporting honey. Being a highly concentrated food product and being desired by the governments of our allies as well as by individual firms within these countries, we believe that honey will be given space if at all procurable. Then, too, by fall, the shipping problem will very likely be considerably relieved.

We see no reason for pessimism among beekeepers in disposing of their 1918 crop, and if we were to change our minimum price suggested last month, 15 cents, we would be inclined to increase it rather than lower it, with a minimum on No. 1 comb honey of $4.50 per case.

There will be need of all the honey we can produce—no one should spare effort to make the crop as large as possible.

**Statement of the Ownership, Management, Circulation, Etc.,** required by the Act of Congress of August 24, 1912, of **American Bee Journal,** published monthly at Hamilton, Illinois, for April, 1918:

STATE OF ILLINOIS, } ss.
COUNTY OF HANCOCK, }

Before me, a Notary Public in, and for the State and county aforesaid, personally appeared M. G. Dadant, who having been duly sworn according to law, deposes and says that he is the Managing Editor of the American Bee Journal, and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management, etc., of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912, embodied in Section 443, Postal Laws and Regulations, printed on the reverse side of this form, to-wit:

1. That the names and addresses of the publisher, editor, managing editor, and business managers are:

Publisher, American Bee Journal, Hamilton, Ill.
Editor, C. P. Dadant, Hamilton, Ill.
Managing Editor, M. G. Dadant, Hamilton, Ill.
Business Manager, V. M. Dadant, Hamilton, Ill.

2. That the owners are:
C. P. Dadant, Hamilton, Ill.
H. C. Dadant, Hamilton, Ill.
V M. Dadant, Hamilton, Ill.
Leon Saugier, Hamilton, Ill.
L. C. Dadant, Hamilton, Ill.
M. G. Dadant, Hamilton, Ill.
Jos. Saugier, Hamilton, Ill.

That the known bondholders, mortgagees, and other security holders owning or holding 1 per cent or more of the total amount of bonds, mortgages, or other securities, are: None.

(Signed) M. G. DADANT.

Sworn to and subscribed before me this 4th day of April, 1918.

H. M. CUERDEN,

My commission expires August 25, 1921.


## KEEP INFORMED ON TEXAS CONDITIONS

The **Beekeepers' Item,** a monthly paper edited by Mr. Louis H. Scholl, well known to our older readers, and an authority, has many interesting items which should interest beekeepers, not only in the Southwest, but throughout our country.

In order to allow you to become acquainted with this paper, we offer a special combination of **Beekeepers' Item** one year with **American Bee Journal** for only $1.25.

Or, if you desire, we can send you your choice of **First Lessons in Beekeeping,** or **Practical Queen Rearing** with the **Item** one year for only $1.25.

**Send all orders to**

**AMERICAN BEE JOURNAL**
**HAMILTON, ILL.**

## QUINN'S QUEENS OF QUALITY

Have no superiors—"There's a reason." Are Mendelian bred, good qualities accentuated. Gray Caucasians, most gentle of all, prolific, hardy, vigorous, disease resistant, white comb builders—they deliver the goods.

ITALIANS, 3-banded, line bred, pedigreed; need no boosting; they speak for themselves. Prices on application at either apiary.

**CHAS. W. QUINN**

Rt. 1, Box 319, Houston, Texas — Box 275, Ft. Myers, Florida

## Notice to Bee-Keepers

We are booking orders for combless packages, for April, May and June delivery, at the following prices:

1-lb. package, $1.80 each; twenty-five or more, $1.70.
2-lb. package, $2.90 each; twenty-five or more, $2.90.
3-lb. package, $3.90 each; twenty-five or more, $3.80.

If queens are wanted, add 75c each to above prices. We will only have tested and breeding queens to offer until June 1, as we will need all our queens for the package trade.

Price of tested queens, $1.50 each.
Breeding queens, $3 each.

The high cost of all material, and labor, compels us to raise the price on our packages. We guarantee safe arrival to your express office. Our bees are free from all disease and are of the best Italian strain.

P. S.—We do not use a frame of brood or any comb at all in our packages, as has been stated by others; this is false.

**References**
**Apalachicola State Bank and Bay City Packing Co., Apalachicola, Fla.**

If you send postoffice money order, have same drawn on Apalachicola, Fla.

**MARCHANT BROS., Sumatra, Fla.**

## Golden Italian Queens

RUSTBURG, VA., R. No. 3, March 18, 1918.

Mr. Ben G. Davis:
Dear Sir—Please find enclosed $5, for which please send me the very best Golden Queen you can for the money. If you can't ship her at once, please notify me. I ordered one from you 3 years ago last fall that was the best I ever saw. Her bees stored 320 pounds of comb honey the first year. I have several of her daughters that are fine.
Hoping to get a good one again, I am yours truly,
J. W. LAWRENCE.

**PRICES OF QUEENS**

| | Nov. 1 to May 1 | | | May 1 to June 1 | | | June 1 to Nov. 1 | | |
|---|---|---|---|---|---|---|---|---|---|
| | 1 | 6 | 12 | 1 | 6 | 12 | 1 | 6 | 12 |
| Untested | $1.50 | $ 7.50 | $13.50 | $1.25 | $ 6.50 | $11.50 | $1.00 | $ 5.00 | $ 9.00 |
| Select Untested | 2.00 | 8.50 | 15.00 | 1.50 | 7.50 | 13.50 | 1.25 | 6.50 | 12.00 |
| Tested | 2.50 | 13.50 | 25.00 | 2.00 | 10.50 | 18.50 | 1.75 | 9.00 | 17.00 |
| Select Tested | 3.00 | 16.50 | 30.00 | 2.75 | 15.00 | 27.00 | 2.50 | 13.50 | 25.00 |

**No Nuclei or Bees by Pound.**
Safe arrival, purity of mating and satisfaction guaranteed.

Queens for export will be carefully packed in long distance cages, but safe delivery not guaranteed.

**BEN G. DAVIS : : Spring Hill, Tenn.**

## THE CANADIAN HORTICULTURIST AND BEEKEEPER

**THE ONLY BEE PUBLICATION IN CANADA**

It is the official organ of the Ontario Beekeepers' Association, and has incorporated with it the former Canadian Bee Journal.

Beekeeping and Horticulture in its various branches are effectively combined to form a live, attractive and practical monthly magazine.

Well illustrated and up-to-date. Subscription price postpaid.
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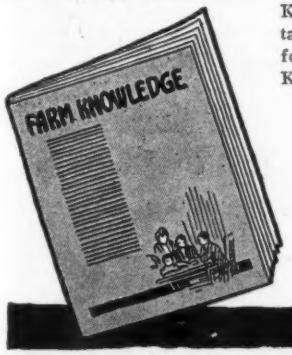


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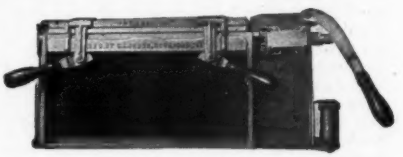

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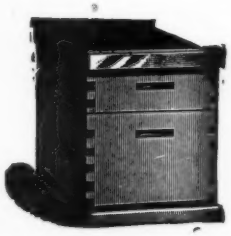

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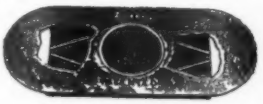

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